

Open Research Online

The Open University's repository of research publications
and other research outputs

Participative Approaches to Hedgerow Conservation

Thesis

How to cite:

Oreszczyn, Susan (1999). Participative Approaches to Hedgerow Conservation. PhD thesis The Open University.

For guidance on citations see [FAQs](#).

© 1999 The Author

Version: Version of Record

Link(s) to article on publisher's website:

<http://dx.doi.org/doi:10.21954/ou.ro.000075c6>

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

oro.open.ac.uk

Participative Approaches to Hedgerow Conservation

Susan Oreszczyn BSc (Hons)

Thesis submitted for the degree of Doctor of Philosophy

The Systems Discipline, Faculty of Technology

The Open University, United Kingdom.

28th September 1999

ABSTRACT

This thesis demonstrates how systems ideas and grounded theory have been applied to provide a broader approach to researching hedgerows in England, drawing on the idea that holistic thinking brings together different people's relationships with hedgerows and with each other concerning hedgerows.

The cultural dimensions of hedgerows and their implications for future hedged landscapes were investigated through the collection and exploration of different groups perspectives - public, farmers and experts - in England and Canada, using a diversity of primary and secondary data sources.

English hedgerows were important to all groups. Everyone liked hedged landscapes for aesthetic, visual and wildlife reasons. They were important for the way they break up the landscape; provide signs of the changing seasons; their sense of mystery and intimacy; their connections with the past and childhood memories. They are also seen as part of England's history and national identity. Such cultural identity was absent in the Canadian data.

However, some groups also held a rational or objective view which was dominant over this subjective or emotional view and which affects where they draw the boundaries to their systems of interest. Farmers were most concerned with their farms (and the hedgerows they owned) as a business, while experts dealt mainly with the ecological aspects of hedgerows.

There was found to be little awareness of others groups views with different groups seeing the same action in very different ways. Even where there was contact between farmers and experts, there could be a lack of trust.

Finally, it is noted that policy and practice towards hedgerows have ignored many of these relationships and that the approach used here offers opportunities to examine the different systems of interest.

ACKNOWLEDGEMENTS

I wish to express my sincere thanks to the many people I know who have supported me through this research. In particular, I should like to thank all those farmers, public and experts who kindly gave up their time to talk with me; my fellow students for their entertaining discussions, encouragement and therapy sessions, and Tadj and Anna for putting up with me. A special thank you to my supervisor Dr. Andy Lane for always having an open door and to Jeanette Evans for looking after Anna.

I should also like to thank the ESRC for their financial support and the Open University Technology Faculty for funding the Canadian study.

Cartoon drawings by Joe Short.

In memory of Alison Downer

10 May 1967 – 22 July 1992.

CONTENTS

Chapter 1

| | |
|--|---|
| 1.1 Acknowledging different Perspectives ----- | 1 |
| 1.2 This Thesis as a Personal View----- | 2 |
| 1.3 The Context For This Research----- | 3 |
| 1.4 The Origins of this Research: Why Hedgerows?----- | 5 |
| 1.5 Doing this Research----- | 6 |
| 1.5.1 A systems approach----- | 6 |
| 1.5.2 Grounded theory----- | 7 |
| 1.6 Reporting on this research: The structure of the thesis----- | 8 |

Chapter 2

| | |
|--------------------------------|----|
| 2.1. What is a Hedgerow?----- | 10 |
| 2.2. Our Hedgerow History----- | 14 |
| 2.2.1 Early hedgerows----- | 14 |
| 2.3 Hedgerows Today----- | 18 |

Chapter 3

| | |
|--|----|
| 3.1 Integrating the cultural and scientific aspects of landscape----- | 20 |
| 3.1.1 Neglecting the cultural: Researching hedgerows----- | 20 |
| 3.1.2: The separation of the cultural and the scientific within landscape studies----- | 21 |
| 3.1.3 Landscape ecology: Integrating the culture and the science?--- ----- | 22 |
| 3.1.4 Systems and landscape ecology----- | 24 |
| 3.2 Taking a Soft Systems Approach----- | 25 |
| 3.2.1 Beyond positivist approaches to research----- | 25 |
| 3.2.2.1 Alternative approaches to researching----- | 26 |
| 3.2.3 From 'hard' to 'soft' systems thinking----- | 27 |
| 3.2.4 Systems thinking and landscape research----- | 31 |
| 3.2.5 Participatory approaches to researching the environment: Systems thinking in action.----- | 32 |
| 3.3 Conclusions----- | 35 |

Chapter 4

| | |
|---|----|
| 4.1 Forming The Research Strategy----- | 37 |
| 4.1.1 Researching human relationships with landscape----- | 38 |
| 4.1.2 Taking a qualitative approach----- | 40 |
| 4.1.3 Grounded theory----- | 43 |
| 4.1.4 Validity issues----- | 47 |
| 4.1.5 The benefits and difficulties of using grounded theory----- | 50 |
| 4.1.6 Uses of grounded theory----- | 52 |
| 4.2 Conducting this Research----- | 52 |
| 4.2.1 Identifying who has a stake in hedgerows----- | 52 |
| 4.2.2 Collecting data for this research----- | 61 |
| 4.3 Analysing the Data----- | 72 |
| 4.3.1 Computer aided qualitative analysis----- | 72 |
| 4.3.2 Analysis within this research using QSR NUD*IST----- | 75 |
| 4.4 Reflections on Chapter 4----- | 77 |

Chapter 5

| | |
|--|-----|
| 5.1 The Publics' Relationship with Hedgerows----- | 80 |
| 5.1.2 The wider perspective: A questionnaire survey----- | 80 |
| 5.1.3 An in-depth perspective----- | 85 |
| 5.2 The Public's Relationships with Others----- | 103 |
| 5.2.1 Hedgerows as theirs----- | 103 |
| 5.2.2 Hedgerows as needing protection----- | 103 |
| 5.2.3 Hedgerows as managed features of the countryside----- | 105 |
| 5.2.4 Understanding----- | 107 |
| 5.3 Where The Public Place The Boundary To Their System of Interest----- | 108 |

Chapter 6

| | |
|---|-----|
| 6.1 A Wider Perspective----- | 112 |
| 6.1.1 Farmers' Relationships with hedgerows----- | 112 |
| 6.1.2 Farmers as wildlife conservationists----- | 114 |
| 6.1.3 Farmers' Relationships with others----- | 117 |
| 6.2 An In-Depth Perspective----- | 119 |
| 6.2.1 Farmers' relationships with hedgerows in their landscape context----- | 120 |

| | |
|---|-----|
| 6.2.2 Farmers relationships with hedgerows in their farm context----- | 128 |
| 6.2.3 Farmers' relationships with others----- | 138 |
| 6.3 Where The Farmers Place The Boundary To Their System of Interest----- | 149 |

Chapter 7

| | |
|---|-----|
| 7.1 A Wider Perspective----- | 152 |
| 7.1.1. Hedgerow plants----- | 152 |
| 7.1.2 Hedgerows as wildlife habitats----- | 153 |
| 7.1.3 Hedgerows as connecting, linear landscape habitats----- | 155 |
| 7.1.4 Hedgerows as functional----- | 156 |
| 7.1.5 Hedgerows as managed for wildlife conservation----- | 156 |
| 7.1.6 Hedgerows as Ideal----- | 159 |
| 7.1.7 Hedgerows as threatened habitats: protection of the special----- | 160 |
| 7.1.8 Hedgerows as visually important----- | 164 |
| 7.1.9 Hedgerows as part of the English landscape----- | 165 |
| 7.2 An In-Depth Perspective----- | 166 |
| 7.2.1 Hedgerows as features of the English landscape----- | 166 |
| 7.2.2 Hedgerows as wildlife habitats----- | 169 |
| 7.2.3 Hedgerows as managed landscape features----- | 169 |
| 7.2.4 Conservation as uncool----- | 170 |
| 7.2.5 Hedgerows as a sign of care----- | 171 |
| 7.2.6 Hedgerows as needing protection----- | 172 |
| 7.3 Where The Experts place the Boundary to their System of interest----- | 174 |

Chapter 8

| | |
|--|-----|
| 8.1 Common Boundaries----- | 176 |
| 8.1.1 Pride----- | 177 |
| 8.1.2 Sense of place----- | 177 |
| 8.1.3 Connection----- | 178 |
| 8.1.4 Experiencing----- | 178 |
| 8.1.3 Englishness----- | 179 |
| 8.2 Rational and Emotional Boundaries----- | 179 |
| 8.3 Relationship Boundaries----- | 181 |

| | |
|---|-----|
| 8.3.1 Ownership boundaries----- | 181 |
| 8.3.2 Functional boundaries----- | 182 |
| 8.3.3 Management boundaries----- | 183 |
| 8.3.4 Loss boundaries----- | 188 |
| 8.3.5 Historical boundaries----- | 189 |
| 8.3.6 Wildlife boundaries----- | 190 |
| 8.3.7 Landscape boundaries----- | 191 |
| 8.3.8 Trust, awareness and understanding----- | 193 |
| 8.4 Neglected Relationships----- | 194 |
| 8.4.1 The 1997 Hedgerow Regulations----- | 195 |
| 8.5 Conclusions----- | 198 |

Chapter 9

| | |
|--|-----|
| 9.1. The Canadian Study Area----- | 201 |
| 9.1.2 Delta's history----- | 201 |
| 9.2 The DWFT Hedgerow Incentive Program----- | 203 |
| 9.3 The Canadian Data----- | 204 |
| 9.3.1 Relationships with others----- | 205 |
| 9.3.2 Relationships with hedgerows----- | 209 |
| 9.3.3 Images of landscape----- | 214 |
| 9.3.4 Hedgerows as landscape features----- | 217 |
| 9.4. Informing the English Study----- | 220 |

Chapter 10

| | |
|--|-----|
| 10.1 Summary of the Research Findings----- | 224 |
| 10.2 Reviewing the Methodology----- | 229 |
| 10.3 Further Research----- | 230 |
| 10.4 Finally----- | 231 |

| | |
|-------------------------|-----|
| References ----- | 233 |
|-------------------------|-----|

| | |
|--|-----|
| Appendix 1: The Background to the 1997 Hedgerow Regulation----- | 254 |
|--|-----|

| | |
|---|-----|
| Appendix 2: The strategies used for demonstrating rigour in qualitative research in human geography----- | 260 |
|---|-----|

| | |
|--|-----|
| Appendix 3: The initial letter sent out to farmers requesting a visit.----- | 261 |
|--|-----|

| | |
|---|-----|
| Appendix 4: The Farmers' Interview schedule----- | 262 |
|---|-----|

Appendix 5: The Self-recorded tape interview schedule-----264

Appendix 6: The questionnaire survey form-----267

Appendix 7 : Current Hedgerow Protection-----271

Appendix 8: Summary of the main features of The Hedgerow Regulations 1997----
-----272

Appendix 9: List of nodes held within NUD*IST-----273

LIST OF FIGURES

| | |
|---|-----|
| 2.1 A view of the English landscape.----- | 10 |
| 2.2 A Map showing the ancient and planned countryside.----- | 16 |
| 2.3 Location of hedgerows in England and Wales.----- | 18 |
| 3.1 Different traditions within systems thinking and practice.----- | 28 |
| 3.2 The relationship between the researcher and the system of interest.----- | 29 |
| 4.1 An example of the landscape in the Buckinghamshire study area.----- | 57 |
| 4.2 An example of the landscape in the Cambridgeshire study area.----- | 57 |
| 4.3 Locations of the English study areas within the UK.----- | 58 |
| 4.4 Data collection for the questionnaire survey.----- | 71 |
| 6.1 An example of a large hedgerow.----- | 134 |
| 6.2 An example of a small hedgerow.----- | 134 |
| 6.3 View of a Cambridgeshire hedgerow from a farmer's home.----- | 135 |
| 7.1 Hedge types produced by different management types as identified by the Institute of Terrestrial Ecology.----- | 157 |
| 9.1 An example of a Canadian hedgerow.----- | 201 |

LIST OF TABLES

| | |
|--|-----|
| 2.1 Words that the people interviewed for this research used to describe the differences between the term 'hedge' and 'hedgerow'.----- | 13 |
| 3.1 The characteristics of hard and soft systems traditions.----- | 30 |
| 3.2 A typology of participation: how people participate in development programmes and projects.----- | 33 |
| 4.1 Characteristics of 'naturalistic enquiry'.----- | 42 |
| 4.2 The benefits and difficulties of using grounded theory.----- | 51 |
| 4.3 A stakeholder analysis for assessing the potential interests in the conservation and management of hedgerows.----- | 56 |
| 4.4 The sources of data used to generate the different perspectives.----- | 62 |
| 4.5 An overview of QSR NUD*IST Facilities.----- | 74 |
| 5.1 Number of questionnaire survey respondents by county.----- | 80 |
| 5.2 The type of hedgerows people liked to see (from the questionnaire survey data).----- | 82 |
| 5.3 Thoughts on hedgerows.----- | 87 |
| 5.4 Ways in which people say they feel hedgerows contribute to the landscape.-- | 92 |
| 5.5 Some of the things people said they like and dislike about hedgerows.----- | 96 |
| 8.1 The functional value of hedgerows mentioned by different groups in their evidence to the Select Committee.----- | 182 |
| 8.2 Potential barriers to hedgerow conservation.----- | 186 |

CHAPTER 1

INTRODUCTION

1.1 ACKNOWLEDGING DIFFERENT PERSPECTIVES

“Renewed battle begins today for the English Hedgerow, and with it for the character of the countryside and the salvation of its wildlife. Campaigners hope it will be a turning point in a long war of attrition waged by farmers, landowners and developers against the hedgerow...”(Guardian 2.7.98 p.19).

As this quote demonstrates the hedgerow is considered an important element of the English landscape evoking highly emotional responses from people. Like many conservation issues, the differences between people are portrayed as conflicts and battles. Particular groups of people make a stand on what they perceive as ‘right’ or ‘wrong’ hedgerow management. Rather than focussing on the conflicts, this research takes a different approach. Different people are considered as possessing different world views and therefore a different perspective on any situation or issue. Each perspective represents only a partial view, which may be brought together with other views to form a more complete picture. Each perspective is therefore considered to be an equally valid part of the whole which, because it is dependent on the perspectives from which it is constructed, will not be static, but will change and evolve with time. This thesis is therefore not about what is ‘right’ or ‘wrong’ hedgerow management, but about researching peoples’ relationships with hedgerows and also each other, and doing so in a participatory or inclusive manner in order to obtain a more complete picture. Although the topic under consideration in the thesis is hedgerows, in many ways hedgerows represent a vehicle for more general ideas about researching and environmental

management, and much of what lies behind what is discussed is applicable not only to other landscape features and landscape management but also to environmental management generally.

1.2 THIS THESIS AS A PERSONAL VIEW

This research draws on theories and ideas from many different fields, ranging from participatory and action research, anthropology, psychology and systems theory to landscape ecology, geography and agricultural and rural studies. The methodology used came from, and has been used extensively in, the area of health research.

Crossing disciplines is not easy; doing this research has been very much a personal journey. Throughout the research process I have had to force my scientifically trained self to accept new ways of understanding and doing things, I have had my paradigms shifted and have battled to understand the philosophical minefield that was for me, as a physical geographer, the 'other world' of the social sciences.

In terms of the research process, it is likely that I have ended up with something that satisfies no-one entirely; neither testable nor replicable for scientists, and too theoretically eclectic for the social scientists. However, I have attempted to be honest throughout and despite the flaws along the learning path, I feel confident that what I argue is 'true' for my data, and no researcher can say more than this in whatever discipline they feel they work. The research was deliberately designed to be generate ideas and I therefore do not view it as a final end product, in many respects it is a foundation on which many different lines of enquiry could now be taken.

What is presented in this thesis represents my own unique perspective, but informed by the views of others. I do not present myself as an objective 'scientific' observer of a world from which I am divorced, but as an integral part of the situation I am researching. I therefore present this research as one more perspective forming part of the current discourse on landscape management, which will inevitably be coloured by my own personal view of a world of which I am also a part.

1.3 THE CONTEXT FOR THIS RESEARCH

The research undertaken for this thesis is set within the context of what is happening within the broad field of environmental research and policy formulation. The manner in which the research proceeded was strongly influenced by a general shift in ways of thinking that can be detected across many disciplines as a realisation of the increasing need for interdisciplinary research and new ways of doing things (see, for example, ESRC and the Foresight Programme, 1998; Naveh, 1995, 1998a and 1998b, Hodge, 1995). Among the many environmental disciplines there is an increasing realisation that the practical nature of environmental problems requires an understanding of human interactions with nature and a more participatory approach to research. This is particularly apparent in the fields of Agriculture and Development Studies (for example, Pretty, 1994), Anthropology (see Ellen and Fukui, 1996), Conservation (for example, Adams, 1996) and Landscape Ecology (for example, Naveh 1998a 1998b, and 1995). That researchers should take a more enabling role, valuing indigenous or local knowledge and working with local communities in partnership to make and implement decisions for themselves and affect decision making at higher levels, is being increasingly appreciated (see, for example Science, 1999).

Much is currently written on the need to move towards the use of multi-research methods and for new approaches to doing research that are grounded in the 'real' world and involve researching with people (Burgess, Limb and Harrison, 1988a and b; Ison, 1993; Pretty, 1994; Kersten, 1995). In such research the researcher views themselves not as a detached observer placed outside the system but as part of the system of interest. While traditionally the model of applied research has taken the form of researchers generating knowledge and other people being expected to implement it, in the new ways of researching, what would have previously been viewed as the subjects of study are viewed as co-researchers (see Kersten, 1995; McClintock, 1996; Ison, 1993). In such research, the researcher becomes part of a participatory process whereby the topic or direction of study is not dictated by the researcher but is generated by the researching process, i.e. through engaging with people.

Within the area of landscape studies, despite a growing recognition of the need to integrate the objective and more subjective areas of research and the hard and soft

landscape values (for example, Naveh, 1998a; Naveh and Lieberman, 1994; Nassaeur, 1995a and 1997), there remains a divide between them, with research tending to be concerned either with the human or the non-human aspects of landscape, but rarely both. While the general landscape literature concerns itself with peoples' perceptions and values of landscape and nature, (see for example, the collections in Gold and Burgess, 1982 and Sinha, 1995), the landscape ecological literature focuses on aspects concerning wildlife. Selman (1996) notes the dangers of scientific interest in landscape dominating environmental solutions at the expense of the social, warning that it is "denying us the possibility of creating visionary, multipurpose landscapes of the future".

Within much of the landscape literature authors treat humans not as an integral part of the landscape but as being in some way separate or 'outside' it, concentrating on what people do to the landscape rather than people as part of it. The soft and the hard aspects are rarely brought together in an interdisciplinary way. Consequently the richness of landscape, wildlife and human interactions are ignored and only a partial view of the whole is represented. Further while there is much concern over the need to be interdisciplinary and participatory when planning or managing landscapes and concern over the lay person failing to see the relevance of the research (see for example Uzzel, 1982; Woodhill and Roling, 1993; Scoones and Thompson, 1994; Grimble, Chan, Aglionby and Quan, 1995), landscape research has not generally concerned itself with being participatory. Studies have also tended to be reductionist, focusing on 'scientifically' measuring objective aspects of landscape, whether they are concerned with the wildlife or the human aspects. Although the subjective nature of landscape is frequently appreciated, the role of the researcher in these studies has been as the objective, detached researcher rather than the researcher working as part of the system.

In this section I have briefly introduced the theoretical context in which this research sits and given a flavour of some of the ideas that have informed my thinking. The next section explains the manner in which the final research direction evolved.

1.4 THE ORIGINS OF THIS RESEARCH: WHY HEDGEROWS?

Grounded in previous practical research on easy to use assessment and management methods for wildlife corridors (see Lane and Oreszczyn, 1997; Lane, Wheeler, and Oreszczyn, 1995), this research originated in the desire to produce an easy to use assessment method for hedgerows that lay people, for example farmers or local enthusiasts, could use. The original aim was to take an holistic approach and include not just the ecological values of hedgerows, but also the historical, aesthetic and ephemeral values. However, although there was much research on which to base criteria for assessing their ecological value and detailed research has been carried out on numbers of hedgerows (see for example, Barr, Gillespie and Howard, 1993; Barr, Britt and Sparks, 1995; Marshall and Moonen, 1998), no academic research has been carried out on what hedgerows mean to people in England, in their 'real' world setting, particularly members of the public.

The UK Government's focus has been on biodiversity and the ecological significance of hedgerows, and to a limited extent their historical significance. Consequently, research, financial incentives and policy have emphasised the conservation of the ecological, such as the dynamics of hedgerow flora or bird and mammal populations, or been concerned with statistics on hedgerow loss. It has focussed on that which can be readily observed and measured objectively and the direct consequences of peoples' actions. Yet hedgerows are part of our cultural landscape and they are part of our history. Many hedgerow plants, for example, form part of English customs or rituals and are steeped in folklore (Mabey, 1996). Hedgerows are not simply a means for conserving biodiversity in the landscape. People value hedgerows not just for their 'hard' readily measurable objective values, such as number of bird species, but also for their 'soft' subjective values, such as colours, patterns and scents. The evidence for this is everywhere, in politicians' speeches, newspaper reports, magazine articles, peoples' conversations about their holidays or gardens. Yet when it came to producing legislation to protect English hedgerows, all this evidence was apparently ignored.

1.5 DOING THIS RESEARCH

Within this research I take the view that the role hedgerows play as part of the English landscape is dependent on all those who have a relationship with them. Policy and management decisions will therefore inevitably involve, both directly and indirectly, a variety of people each with their own perspectives, for example, farmers, policy makers, the rural and urban public, historians, ecologists and conservationists. Within this research all these groups are viewed as having a stake in hedgerows as part of our common cultural landscape. I have therefore attempted to reach a more complete picture, and to bring together the scientific and non-scientific aspects of our hedged landscape by exploring and bringing together different people's relationships with hedgerows. The aim was to embrace the richness of the topic rather than to simplify it; to move away from being overly concerned with peoples' behaviour and what people do to the environment, and towards a more positive approach of finding ways of working together. Central to the research is the question 'What relationships do different groups of people have with hedgerows?'

1.5.1 A Systems approach

Although, as previously mentioned, there is much interest in interdisciplinary and participatory research, it is equally apparent that people within the academic research community are still struggling with how exactly to become more interdisciplinary and participatory within research. It is still relatively uncommon to find research which crosses discipline barriers and which embraces rather than reduces complexity. Within this thesis I offer systems thinking as a way towards a more integrated and participatory approach to landscape research and decision making. That is, thinking of wholes in terms of connectedness, relationships and context (Capra, 1996; Ison and Blackmore, 1997). The Systems Discipline is my academic 'home' within the Open University, and systems therefore inevitably provided the backdrop for this research. However, systems theories are also increasingly being recognised as providing a theoretical basis for new approaches to environmental management and sustainability (Selman, 1996; Naveh 1998a and 1998b; CAG Consultants, 1997; Ison, Maiteny and Carr, 1997; Department for International Development, 1999).

Systems thinking underpins the whole thesis. It informs not only the theoretical framework, but also the structure, methodology, fieldwork, analysis and conclusions. For example, I was attracted to the use of Grounded Theory (Glaser and Strauss, 1967; Glaser, 1993 and 1994) as the methodology because of its systemic nature of enquiry and concern with producing theory that can be readily understood by the lay person. One of the difficulties with interdisciplinary research is that each discipline has its own body of literature and own 'language' which can be impenetrable to those outside that discipline, let alone a lay person.

1.5.2 Grounded theory

The research process has not taken the common 'scientific' form whereby a hypothesis is stated and then tested. I began the research process with a very general question which had emerged from a realisation of gaps within the academic hedgerow literature. Informal conversations with farmers and members of the public revealed strong feelings about hedgerows which they felt were not regarded seriously, particularly by the policymakers. It was felt important that this central question to the thesis, 'What relationships do different groups of people have with hedgerows?', should be answered by people themselves, and in their own words. The data should, as far as possible, speak for itself and the theory should be firmly grounded in the data. Grounded theory (Glaser and Strauss, 1967; Glaser, 1993 and 1994) was chosen as the methodology as it fulfilled these requirements and offered a systemic research process. Within the grounded theory methodology, theory is generated from the data as the research process proceeds rather than by posing and testing an initial hypothesis. This allows the research to proceed according to the concerns of the people involved rather than those of the researcher.

One of the concerns of grounded theorists is that taking notice of the academic literature can actually result in hindering the use of the grounded theory process resulting in the researcher proceeding down a 'forced' route, rather than being guided by the emerging theory. It is therefore argued that an exhaustive search of the literature within the field of study before data collection should be avoided (Glaser and Strauss, 1967). However, no researcher can actually enter a field in a completely uninformed manner, they will always bring with them their own understanding of the world based on their own experience and informed by

material they have read. Within this research the academic literature is drawn on for the theoretical framework and is used as data itself.

1.6 REPORTING ON THIS RESEARCH: THE STRUCTURE OF THIS THESIS

This research attempts to deal with and to embrace a rich, interconnected web of relationships. The research process itself was deliberately non-linear. The nature of the research and methodology used did not therefore readily fit into the accepted linear structure of conventional research or thesis presentation. The presentation of this thesis may therefore be viewed more in terms of a network of interconnecting parts rather than as a linear piece of work, with the different groups' perspectives standing alone in their own right.

In this introduction I have attempted to present an overview of my own thinking behind the research. In Chapter 2 I present hedgerows as cultural features of the English landscape. Chapter 3 firstly sets out in more detail my academic understanding from the literature of current approaches to landscape research which have informed what I set out to do, and secondly details the theoretical approaches underpinning the approach taken in this research. However, although I entered this research field with these understandings, which in turn informed my approach, the actual understandings gained and expressed in Chapters 5 to 9 are firmly grounded in the data gathered for the research rather than this prior information.

In Chapter 4 I explain the research process and in particular the use of Grounded Theory for generating the relationships that different groups of people have with hedgerows. Chapters 5, 6 and 7 respectively present the perspectives of the three main groups identified for the purposes of the research - the public's, farmer's and expert's relationships with hedgerows. Although these categories are somewhat artificial, they served as a useful device in the research process. Each of these chapters first presents the wider group view and then examines in-depth individual views. Data is drawn from multiple sources including both primary data, i.e. that which was obtained specifically for this research project and secondary data, i.e. data collected from other sources. The academic literature on hedgerows is itself

treated as data as it forms a large part of the expert view of hedgerows and is therefore included in Chapter 7. It may feel uncomfortable for an academic reader to present the expert view in this manner and not as a formal literature review, however, it has been placed here deliberately to emphasis that within this research the expert view represents one perspective and that all perspectives are taken to be of equal importance. Chapters 5, 6, and 7 stand alone, representing different groups of people's perspectives and relationships with hedgerows.

Chapter 8 draws together the different groups' perspectives and examines where the collective boundaries are currently being drawn, what stake the different groups feel they have in the hedged landscape and whose relationship is taking priority. Chapter 9 then goes on to explore the cultural dimensions of hedgerows which represent a perspective or relationship through time. The cultural dimension is highlighted by contrasting the English situation with an example of a different cultural landscape in Canada.

Chapter 10 concludes the thesis by summarising the main conclusions of the research and examining the implications for decision making concerning hedgerows. It also comments on the approach taken and suggests directions for further work.

I have begun this thesis with an introduction in which I have attempted to set out my thinking and place within my research. It is not usual for researchers to openly state the position they are coming from, or how they know what they know. I have done so here because I view it as central to the research process within this PhD and in the hope that it will avoid some of the confusion that, from my own experience, frequently occurs when crossing disciplines.

CHAPTER 2

HEDGEROWS AS PART OF OUR CULTURAL LANDSCAPE

This chapter looks at what hedgerows are and their place as part of our cultural landscape which has been shaped by humans over the centuries. Hedgerows are a feature of many agricultural landscapes of the world. They have for example, been researched in the USA (see for example Bahr and Fahrig, 1998), Kenya (David, 1995), France (Burel and Baudry, 1995) and Italy (Zanaboni and Lorenzoni, 1989). Although hedgerows are also present in the landscapes of lowland Scotland, Wales and Ireland, and the recent hedgerow legislation (Department of the Environment, 1997) applies to both English and Welsh hedgerows, this research has focussed on hedgerows within the English landscape. Chapter 9 does, however, draw in a contrasting Canadian hedged landscapes a way of highlighting cultural aspects.

2.1. WHAT IS A HEDGEROW?



Figure 2.1: A view of the English landscape.

Hedgerows, or hedges, are a common component of the English landscape. If asked, it is likely that most English people would say they know what a hedgerow is. Yet defining what is a hedgerow is not easy. The term can mean different things to different people depending on where they live. For example, to someone in Devon, Cornwall or Pembrokeshire it may describe an earth bank or stone wall, in Lincolnshire it may be a line of short thorn shrubs, on Exmoor and in parts of East Anglia it may be a line of tall trees. A hedgerow need not necessarily be a living thing. Dead hedgerows were probably a common feature before the thirteenth century, as portrayed in fourteenth century Flemish landscape miniatures (Pollard, Hooper and Moore, 1974). Since the twelfth century a dead hedge, the 'Penny' hedge, has been built on the shore at Whitby each year as part of a tradition. The word 'hedge' itself is believed to be of Anglo-Saxon origin. There are several Old English words which appear to mean what we now call "hedges". For example, *hedge* (*hedge*), *hegeraewe* (*hedgerow*), *raew* (*row*) and *haga* (*haw* or *haugh*), all of which appear to mean the same as *hege*, (i.e. a linear feature) and which was the most common Anglo-Saxon word for a hedgerow (Rackham, 1986). It is also believed to be the source of many English place names, such as Thornhaugh, Priors Haw, and Hawes.

One dictionary (Collins, 1982), defines a hedge as "a row of shrubs or bushes forming a boundary", or "a barrier or protection against something." In recent published literature the term hedgerow has been defined as:-

"a line of woody plants so managed as to provide a barrier to stock" (Pollard et al., 1974);

"a narrow belt of vegetation, dominated by a variety of shrubs and occasional trees, separating one area of land from another" (Dowdeswell, 1987);

"a more or less continuous line of woody vegetation that has been subject to a regime of cutting in order to maintain a linear shape" (Barr et al., 1993);

" a boundary, or part of a boundary, which comprises a row of bushes or low trees growing closely together, and which have been managed through cutting to maintain a more or less dense, linear barrier" (Barr and Parr, 1994);

or "a narrow corridor of woody vegetation and associated organisms that separates open areas" (Forman, 1995).

Hedgerows are also often described by their perceived function, such as shelterbelts, windbreaks, woody field borders or fencerows. Ecologists and conservationists frequently consider hedgerows as wildlife corridors, i.e. “ a strip of a particular type that differs from the adjacent land on both sides” (Forman, 1995) and as field margins.

However, none of these definitions takes into account the full diversity of hedgerows found in Britain, for example, the hedge banks of Pembrokeshire do not necessarily contain woody plants. Neither do they capture the richness of what hedgerows mean to people.

The term hedge and hedgerow tend to be used interchangeably in the literature and are generally deemed to have the same meaning. However, when people were interviewed for this research, they were mostly found not to think of a hedge and a hedgerow as being the same. In analysing the interview data for this research, I only found 4 out of 31 respondents who felt that there was no difference when answering the question as to whether they saw a difference between hedges and hedgerows (see table 2.1). The majority of people felt that there was a difference in terms of scale and wildness. That is, a hedgerow was perceived as being something larger, more wild or natural and situated in the countryside rather than an urban environment, whereas a hedge was frequently described as being short and found in gardens. For example, when asked whether they saw a difference between hedges and hedgerows one person commented:

Physically no. In word and how I imagine them, yes. A hedge is short and low, hedge is singular. Hedgerow is larger, a network, more romantic. When writing I use it this way. [BPROF4:33-36]

And another said:

A hedge is just for decoration and usually short, but hedgerows go on for a long way and are usually grown over a period of time with various types of bushes in a hedgerow, whereas hedges tend to be only of one variety. [BPSI2:23-25]

The letter and numbers in brackets after quotes from the data, found throughout this thesis, refer to the raw data held on computer within the qualitative analysis software NUD*IST (see chapter 4 section 4.3). The letters identify the respondent and the numbers refer to the text units within that person's transcript.

Table 2.1: Words that the people interviewed for this research used to describe the differences between the term 'hedge' and 'hedgerow'.

| Hedge | Hedgerow |
|----------------|-------------------------|
| Functional | Old |
| Garden | Bigger |
| Single species | With more history |
| Short | Long |
| Small | Cover greater distances |
| Low | Linking |
| Single | Larger in size |
| Singular | A network |
| For decoration | Different heights |
| Neat | More romantic |
| Uniform | Grow wild |
| Monoculture | Diverse |
| Exotic | Several species |
| Pruned | Not organised or pruned |
| Well manicured | Varying structure |
| Planted | Wide |
| Scattered | Messy |
| Old | Dividing fields |
| | In the country |
| | Continuous |

I also found in this research that a hedge was used to express the singular, and hedgerow the plural, i.e. hedge-as-rows. Observation of people discussing hedgerows and hedges also confirmed that, although people did not directly make a distinction, there was a tendency to talk about hedges in the context of something smaller and a hedgerow as something larger. Garden boundaries in particular were talked and written about as hedges and not hedgerows. It appears that although people do not outwardly acknowledge that there is a distinction between hedges and hedgerows, in practice we do make one and it tends to be generally the same kind of distinction across all the people interviewed.

Within this research I take a broad definition of hedgerows, i.e. a line of vegetation separating areas of land. In common with other hedgerow literature, I use the terms hedge and hedgerow interchangeably.

I have attempted here to demonstrate that even something as seemingly simple as defining what a hedge or hedgerow is can, in practice, be quite complex. Although we generally have a common understanding about what they are, there are many different perspectives on how the terms may be defined. The terms hedgerow and hedge are themselves cultural understandings, rooted in our history.

2.2. OUR HEDGEROW HISTORY

Hedgerows are an important part of the historic landscape character of lowland England that has emerged as a result of centuries of human activity in the landscape. What we see today is the result of the way hedgerows have been planted and managed by generations in the past. However, although hedgerows are generally considered to be man-made, i.e. having been planted or fashioned from the woodlands by generations of farmers, they may also form spontaneously. For example, they may develop naturally along field boundaries such as banks, fences or ditches, particularly where they have become neglected. In the USA, for example, there are many miles of hedgerow which have established naturally along fence lines (Rackham, 1990). However, English rural hedgerows are largely the product of planning and management of past farming systems.

2.2.1 Early hedgerows

Until recently the official view was that nearly all English hedgerows were the product of the eighteenth and nineteenth century Enclosure Acts (Rackham, 1990). However, hedgerows have a place in history throughout Europe which goes much further back. Exactly how far back is uncertain as the most common hedgerow species, hawthorn and blackthorn, are not commonly found in fossil pollen deposits as they are insect rather than wind pollinated (Jones, 1999). Thus, unlike other woodland species they are not well represented in the pollen record which extends back about 13,000 years. However, recent work in Germany and Holland dates hedgerows back to the Neolithic period (4000-2000 BC) and it is argued that the

hedgeless landscape of the English landscape in the Dark and Middle Ages was the result of earlier hedgerows being taken out (Rackham, 1990). Roman and prehistoric field boundaries were almost certainly originally hedged (Robinson, 1978). Possible evidence for an Iron Age hedgerow at Alcester, Warwickshire exists and there is evidence of Bronze Age hedgerows at Ashville near Abingdon in Oxfordshire and Heybridge in Essex (Morgan Evans, 1994). Old field systems dating back to the Bronze age are still in existence today at Zennor in Cornwall (Carr and Bell, 1991; Menneer, 1994).

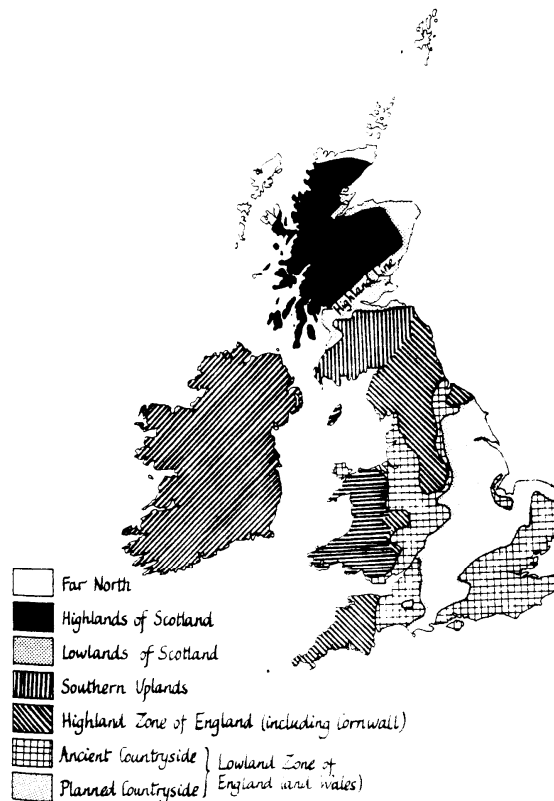
Hedgerows were also found in ancient Rome (Rackham, 1990), however, recent archaeological evidence suggests that in England, hedgerows pre-date the Romans and that they would have arrived to find an English landscape which was already hedged. The evidence also indicates that hedge-laying was taking place in Roman Britain (Morgan Evans, 1994). Although the evidence is not conclusive, a ditch at the site of Bar Hill Roman Fort in Dumbartonshire included wood, identified as *Cretaeus* (Hawthorn), which showed evidence of hedge-laying and further evidence has been found at another site at Farmoor in Oxfordshire. Evidence also exists for box hedgerows at Roman Villa sites (Robinson, 1978).

The oldest documentary reference to a hedgerow comes from Caesar two thousand years ago, while fighting on the French-Belgium borders (Pollard et al. 1974). Maps and pictures as far back as the written record extends also depict hedgerows as part of the English landscape. The Anglo-Saxon charters mention a total of 378 English hedges, haws and rows and frequently mention hedgerow trees (Rackham, 1986). Their distribution, however, was very uneven. Many hedgerows are mentioned in the London Basin and north-west Dorset, while some parts of England, such as the Vale of Evesham, have no mention at all. Anglo-Saxon hedgerows appear to have been found mainly in areas that had woodland. There exists much evidence for hedgerows from the twelfth century onwards, particularly from court rolls and estate accounts. There are many records of Medieval hedgerow planting and throughout the Middle Ages hedgerows increased, thus by the fifteenth century they occurred throughout England.

As well as providing a stock proof boundary, hedgerows were important sources of fuel wood and hedgerow trees were particularly important during the poverty stricken time of the Little Ice Age. In Medieval times hedgerows were managed by coppicing and offences such as stealing wood from hedgerow trees and allowing hedgerows to overgrow roads were frequently reported (Rackham, 1990).

In his work on the history of the British countryside Rackham (1986) has described the landscape of lowland Britain as falling into two main categories - the Ancient and Planned Countryside, see figure 2.2.

Figure 2.2: A map showing the ancient and planned countryside (Source: Rackham, 1986)



Since records began, the Ancient Countryside has been hedged. In Medieval times numerous hedgerows enclosed fields. In the Planned Countryside there were fewer hedgerows, usually enclosing villages or parishes with a few scattered in open fields or close to the edges of woods. The ancient hedgerow is typical of the ancient countryside and is much favoured by the 'experts' for its rich flora. A hedgerow with flora typical of ancient woodland is believed to be evidence of a hedgerow of medieval origin. Such hedgerows may have originated as assarts where, in the twelfth century, it was common for woodland to be cleared for farming under licence from the larger landowners (Dowdeswell, 1987). Thus assarts usually had a woodland edge and the hedgerows were probably formed from saplings taken from the wood.

The open field system, introduced around 800 AD resulted in the amalgamation of arable land which was then farmed communally. One or two large open fields near the main settlement were created and the land was cultivated in strips by individual farmers. Early enclosure of these Medieval fields can be identified by their curving boundary, which is in the shape of an elongated reverse 'S' and which resulted from teams of oxen turning as they ploughed the land. The 'S' shaped boundaries provide evidence of their existence since Medieval times as beyond 1400 little strip cultivation was introduced (Carr and Bell, 1991). The open field system appears to have declined in part as a result of the Black Death and consequent shortage of labour. Subsequently, arable farming was replaced by sheep farming which was more profitable. During Tudor (1485-1603) and Stuart (1603-1714) times hedgerows increased in the Planned countryside, enclosing fields and parishes, (Rackham, 1990). As farming methods improved and the demand for agricultural products grew during the rise of the Industrial Revolution, the larger and more progressive farmers and landowners demanded enclosure of the previously open land. Parliamentary Inclosure Acts were passed granting permission for the enclosure of open fields (see appendix 1).

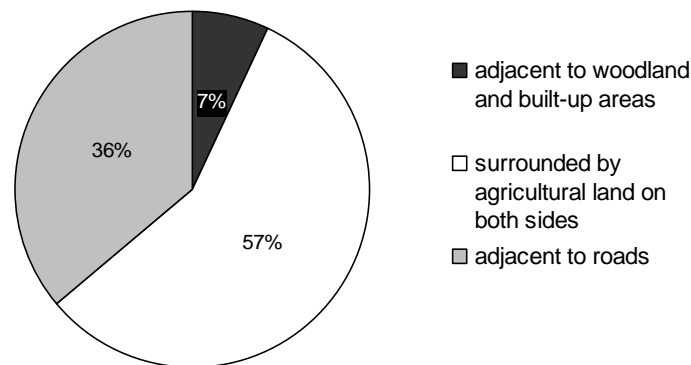
The main period of enclosure occurred between 1750 and 1850 when around 200,000 miles of hedgerows were planted, changing the character of the landscape in these areas. This period has been considered by many as a critical stage in the transition from feudalism to capitalism in Britain and profoundly affecting our culture (Burt and Archer, 1994).

Almost every hedge that was present in 1850 was still present in 1950 (Rackham, 1990). However, after 1950 hedgerows were pulled out at an unprecedented rate and with the invention of the mechanical trimmer, the fashion came to keep them very neat and tidy. Demands for hedgerow removal because of the land they took up and the need to turn the new machinery, were first made at the beginning of the nineteenth century. 5,000 miles of hedgerows are estimated to have been lost between 1946 and 1963 (Pollard et al., 1974) particularly in the south and east of England, resulting in growing public concern. Large numbers of hedgerow trees were also lost as a result of Dutch Elm Disease between 1973 and 1983 and the introduction of the annual use of mechanical hedge trimmers prevented young hedgerow trees from maturing to take their place.

2.3 HEDGEROWS TODAY

As the previous section demonstrates, the English landscape of today has been shaped and formed through centuries of human intervention, with unhindered ecological processes playing only a limited role. It is mainly an agricultural landscape with 88% of the land being countryside, but it is a different kind of agricultural landscape from that of the past. Most rural hedgerows are situated on agricultural land (see figure 2.3), therefore most of the changes are associated with agriculture.

Figure 2.3: The location of hedgerows in England and Wales. (source: Barr, Gillespie and Howard, 1993)



Over the last 40 years the areas of England dominated by arable farming, such as East Anglia and southern and central England, have witnessed a shift away from mixed farming to a more uniform landscape dominated by cereals. This change has been associated with a decline in hedgerows and other semi-natural habitats (Pollard et al., 1974; Hooper, 1992; Bunce, Howard, Hallam, Barr, and Benefield, 1993).

Evidence for recent change is provided by the Institute of Terrestrial Ecology (ITE) (Barr et al., 1993; Bunce et al., 1993; Barr and Parr 1994;). Between the years 1984 and 1993 there was a net loss of 158,000 kms of rural hedgerows (Countryside Agency, 1999). However, the ITE studies showed that when the period 1984-1990 is compared with the period 1990-1993, complete removal of hedgerows has declined such that during 1990-93 increases in hedgerow planting

more than offset decreases through removal. Their evidence suggests that changes in management practices (such as neglecting a hedgerow so that it becomes a line of trees or gappy shrubs), which were found to be more marked in the period 1990-93 than 1984-90, are now more of a cause for expert concern.

Today hedgerows may often be the only semi-natural or 'wild' areas left on a farm, particularly in the regions dominated by arable farming, such as East Anglia. Such changes have had a dramatic impact on the character of the landscape, particularly in areas where their loss is greatest. The way we change the land today will affect the landscapes of future generations. Hedgerows have become highly valued features in our present day agricultural landscape and although their removal today may be viewed as simply another phase of landscape change, there has been much public and professional concern over their loss resulting in Government legislation (Department of the Environment, 1997, see also Appendix 1).

In this chapter I have attempted to demonstrate that hedgerows are not simply ecological but also cultural features of the English landscape. The next chapter sets out the theoretical context within which this research is set and examines the way that the cultural aspects of landscape have tended to remain separate from the ecological aspects.

CHAPTER 3

A PARTICIPATORY APPROACH TO RESEARCHING HEDGEROWS

“Culture and Landscape interact in a feedback loop in which culture structures landscapes and landscapes inculcate culture.” (Nassauer, 1995a).

This chapter discusses the ideas and thinking which led to the approach taken in this research. Section 3.1 examines the way that the cultural aspects of hedgerows have been neglected and landscape studies generally are fragmented. I examine the claims that the field of landscape ecology can bring together the ‘hard’ scientific and the ‘softer’ cultural aspects of landscape, and the move away from positivistic approaches to research and towards new participatory approaches based on soft systems thinking. Although systems ideas have been viewed as a foundation for landscape ecology (Naveh, 1995) there has been little application of soft systems thinking or participatory methodologies in the discipline of landscape ecology and this is discussed in some detail in section 3.2.

3.1 INTEGRATING THE CULTURAL AND SCIENTIFIC ASPECTS OF LANDSCAPE

3.1.1 Neglecting the cultural: Researching hedgerows

While there exists a gathering body of ‘scientific’ knowledge on the ecological value of hedgerows to the English landscape (see chapter 7), and their history is increasingly well documented, the cultural aspects of hedgerows have been neglected. Yet such aspects could be considered to be a key reason for conserving hedgerows for present and future generations. The visual, aesthetic, ephemeral and emotional values and their contribution to landscape character and sense of

place and history are arguably as important as the ecological. However, such values have generally been ignored by the academic community.

Much has been written on farmers' perceptions and attitudes to wildlife and conservation (for example, Carr and Tait, 1991; McEachern, 1992; Beedell and Rehman, 1996; Battershall and Gilg, 1996; McHenry, 1997). However, while some of these studies have included farmers' behaviour or attitudes towards hedgerows, they have concentrated on wildlife conservation generally and what farmers do to their environment or the conflicts between groups such as farmers and conservationists.

A few studies have been undertaken in other parts of the world on the non-scientific aspects of hedgerows. For example, an American study focussed on the scenic beauty of shelterbelts using undergraduate students as its subjects (Cook and Cable, 1995) and a study by Coeterier and Dijkstra (1976) has evaluated the effect of visual changes for local people in the hedgerow landscape of the Goese Peole region of the Netherlands. More recently a small scale study was undertaken in France (Burel and Baudry, 1995a) which examined farmer and non-farmer perceptions of a hedged landscape. However, no academic studies have been undertaken on how people in England, particularly members of the public, may value hedgerows and little attention has been given to integrating the human and ecological aspects of hedgerows.

This lack of information on the non-ecological aspects of hedgerows was my starting point for this research. The neglect of the cultural aspects of hedgerows represents a major theme running through this thesis which may be viewed in the context of a wider debate about the way that the social and scientific aspects of nature and the environment lack integration, and the way that nature and the environment has tended to be primarily the concern of scientists. The next sections examine some of these debates.

3.1.2: The separation of the cultural and the scientific within landscape studies

The term landscape is not an easy concept to define. Historically, the meaning of the word 'landscape' has not remained constant, undergoing many semantic and epistemological changes (see Naveh and Lieberman, 1994). Unlike ecology, landscape studies is not recognised as a discipline in its own right, although it has

been central to the field of geography (Simmons, 1993) and is covered by a range of disciplines ranging from the environmental sciences, through psychology to arts (see, for example Muir, 1998).

The different definitions of landscape put forward by people with different concerns demonstrates the way in which different people within the field of landscape studies view it. For example, the Countryside Commission, an organisation with a focus on people, has defined landscape as “the visual appearance of the land, including its shape form and colours” (Countryside Commission, 1993), while landscape texts with a scientific focus describe landscape as “a heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in a similar form throughout” (Forman and Godron, 1986), or as “a mosaic where the mix of local ecosystems or land uses is repeated in a similar form over a kilometres wide area”, (Forman, 1995). Galindo-Leal and Bunnell (1995) point out that in resource management the term ‘landscape’ is often used interchangeably with the word ecosystem. These definitions demonstrate the way that cultural and scientific aspects of landscape studies have tended to remain separate and the tendency for ecologists to view landscape as an object for ‘scientific’ study rather than as something of which we, as humans, are an integral part. Frondorf, McCarthy and Zube (1980), for example, have commented on the way that terms such as ‘love’ are rarely applied to landscape as this would not be considered ‘scientific’. Although few definitions of landscape explicitly link the cultural and social with the scientific aspects, as noted by Naveh (1995), the holistic definition of landscape given by Troll (1971) i.e. “the total natural and human living space”, brings together the objective and the subjective, bridging the gap by viewing landscape as being the ‘total human ecosystem’ in which the role played by the human mind, consciousness and creativity are acknowledged.

3.1.3 Landscape ecology: Integrating the culture and the science?

Unlike the term landscape there is general agreement between ecologists as to the meaning of ecology, which has been defined as “the science of the relations of living organisms with each other and with their non-living environment”. It is considered as the scientific discipline (Forman, 1995) that has historically contributed most to environmental research (Simmons, 1993). Landscape ecology is a relatively new discipline which attempts to meld the subject areas of ecology and landscape studies. Although viewed as controversial among some scientists, it

is viewed by many as an opportunity to integrate the scientific and cultural disciplines and so play a major role in tackling current issues concerning environmental resource management (Selman, 1993 and 1996; Nassauer, 1995; Hobbs, 1997). Naveh and Lieberman (1994), in particular, view landscape ecology as “a transdisciplinary, problem-solving, human ecosystem science” and as a means for transcending the “narrow, discipline-orientated paradigms” of the conventional environmental disciplines.

Landscape Ecology first developed from the ideas of biogeographers in Central and Eastern Europe. The term ‘landscape ecology’ was coined by the German Carl Troll in 1939, who defined landscape as “the total spatial and visual entity” of human living space (Troll, 1971). Troll viewed landscape as “a fully integrated holistic entity”, a whole which is more than the sum of its parts, a view also supported by Naveh and Lieberman (1994). Naveh (1995) argues against reliance only on formal quantitative studies in landscape ecology and views positivistic approaches as treating cultural factors “merely as external disturbance factors” causing “undesirable changes”. However, as argued by Nassauer (1995), most landscape ecologists still possess a highly simplified concept where anthropogenic and natural effects are viewed separately. Selman (1996) and Hobbs (1997) note that while scientists have contributed much to landscape ecology, social scientists have only made a limited contribution to the field. Concern has also been expressed over the application of landscape research. Although scientific studies are very important within landscape ecology, they are not enough in themselves. As noted by Farina (1993), simply collecting more and more scientific information is not sufficient for improving the environment or the human condition. Hobbs (1997) comments that landscape ecology at present has little to offer those who have to plan and manage landscapes.

Thus there appear to be two issues raised within Landscape Ecology. Firstly that academics from different disciplines, i.e. scientists and social scientists, need to work together in a more integrated way, and secondly that better links with those who actually use the research need to be formed. Integration and applicability can be achieved by multi-disciplinary teams working together on projects and by a conceptual framework that promotes integration on the part of an individual researcher.

3.1.4 Systems and landscape ecology

Systems theories are recognised by some as being a foundation for Landscape Ecology and as a means for considering landscapes in an holistic way (Naveh, and Lieberman, 1994; Naveh, 1995; Selman, 1996; Nasseaur, 1997). Systems theory first developed as a result of arguments about reductionist approaches to Biology and was founded on ideas presented by Ludwig von Bertalanffy in the late 1930s. This original theory (see, Bertalanffy, 1968) and all subsequent developments are based on the notion of a system which may be viewed as “an adaptive whole, the whole entity that may adapt and survive in a changing environment” (Checkland and Haynes, 1994) or as “An integrated whole whose essential properties arise from the relationships between its parts” (Ison and Blackmore, 1997). The word ‘system’ is derived from the Greek *synhistanai*, meaning ‘to place together’. Such a whole will have emergent properties which are not obvious when only the constituent parts are considered. They emerge only as a result of relationships and interactions between the parts. For example, a hedgerow management system will have many components (or stakeholders, see figure 4.3, section 4.2.1.1) each of which will influence the other components to produce a complex, interconnecting web of relationships. Simply considering one component will not give you a complete picture. Capra (1996) views systems thinking as being contextual, that is, thinking in terms of connectedness, relationships and context.

More specifically, the Department for International Development (1999), define a systems approach to research as meaning “identifying and addressing researchable issues in their developmental context, by undertaking analysis of all the technical, economic, social and institutional inter-relationships that are involved in a given situation.”

Systems philosophy, theory, models, concepts and methodologies have been developed and applied extensively to researching people, organisations and environments (see Stowell, Ison, Armson, Holloway, Jackson and McRobb, 1997). They have also become prevalent in fields such as agricultural and environmental research, and development studies (for example see Pretty, 1994; Morris, 1997; Paine, 1997). Such approaches are increasingly being recognised as important for improving environmental problem solving and decision making in the UK (CAG Consultants, 1997; Ison, Maiteny, and Carr, 1997; Ison and Blackmore, 1997).

However, there has been little application of these 'soft' systems methodologies within the field of Landscape Ecology.

This research has taken a systems approach to researching hedgerows. In the next section I set out the thinking behind, and the development of, new ways of researching the environment which are based on systems thinking and are therefore holistic and participatory.

3.2 TAKING A SOFT SYSTEMS APPROACH

Since the initial work on systems theory by von Bertalanffy and his colleagues, many different traditions have evolved within the systems discipline. In common with developments within other disciplines, particularly those within the social sciences, applied systems thinking and research has moved away from traditional positivistic approaches to new approaches which consider the complexities of humans as part of the system. This section examines the move away from positivism and the development of soft systems and participatory approaches based on these ideas.

3.2.1 Beyond positivist approaches to research

Positivism, or rationalism, views knowledge of the world as something real. Knowledge is seen as being detached and objective and can therefore be extracted or documented (Simons, 1993; Pretty, 1994). Most methods of enquiry are reductionist, i.e. they involve breaking down systems into their component parts and viewing each of the parts in isolation. Any system or subsystem being studied is seen as distinct from its environment. Although the method of analysis used may be evaluated, traditions of understanding developed in this way are not open to question (Ison and Blackmore, 1997). Such methods of enquiry, which are exemplified by the scientific method, are linear in their approach and focus on the measurable. They involve a high degree of control over a system in order to gain what is viewed as 'true' knowledge of an external 'reality'.

It has been argued that positivist approaches often lead to research which has separated people from their environment (Koh, 1982). It is also suggested that such approaches have led to an 'expert culture' which disempowers 'non-experts'

and which attempts to deal with social phenomena in the same way as natural phenomena (Woodhill and Roling, 1993). It is further argued that this way of viewing the world and the process by which knowledge is acquired has led to the conventional, linear, top-down approach to research and management, whereby lay-people are seen as the 'adopters' of technology or management methods which has been developed and transferred to them by 'experts' (see for example Kersten, 1995). Science and the knowledge of the 'experts' are seen as being superior to that of the users of technology (Scoones and Thompson, 1994). As a result lay peoples knowledge is often represented as 'primitive', 'unscientific' or 'wrong' and that to improve their understanding people should be 'educated' (Pretty, 1994).

It is becoming apparent across many different disciplines that alternatives are required to positivist approaches to research, which are viewed as reductionist and mechanistic (Lincoln, and Guba, 1985; Robson, 1993; Pretty, 1994; Naveh, 1995; Hammersley and Atkinson, 1995; Ellen and Fukui 1996). It is recognised that although reductionist approaches may be useful for well defined technical or natural phenomenon, they may not ask all the relevant questions or deal with complex multi-faceted 'human' problems (Pretty, 1994; Woodhill and Roling, 1993).

3.2.2.1 Alternative approaches to researching

Alternative views appreciate that positivism is not the only way of viewing the world, that it is simply one way of seeking and describing knowledge. Knowledge is not viewed as being independent of context, i.e. explanations and knowledge acquisition cannot be neutral and objective as they are social acts. Scientific enquiry itself is therefore viewed as a social or cultural activity. These views recognise that each individual will have their own way of reasoning or 'world view' based on past experiences, which only gives us a partial view of the world. Thus they acknowledge that there can be many different perspectives of the world and that each is equally valid, i.e. no single understanding of the world may be viewed as being correct (Pretty, 1994). Methods of enquiry therefore need to be adopted which are systemic and involve consideration of these multiple views or perspectives.

New approaches to environmental and natural resource research and management have emerged in response to criticism of the positivist approaches and the linear models for research and its application (Simmons, 1993; Ison, 1993 and 1993a; Lane and Oreszczyn 1997). In their book *Redefining Nature*, Ellen and Fukui

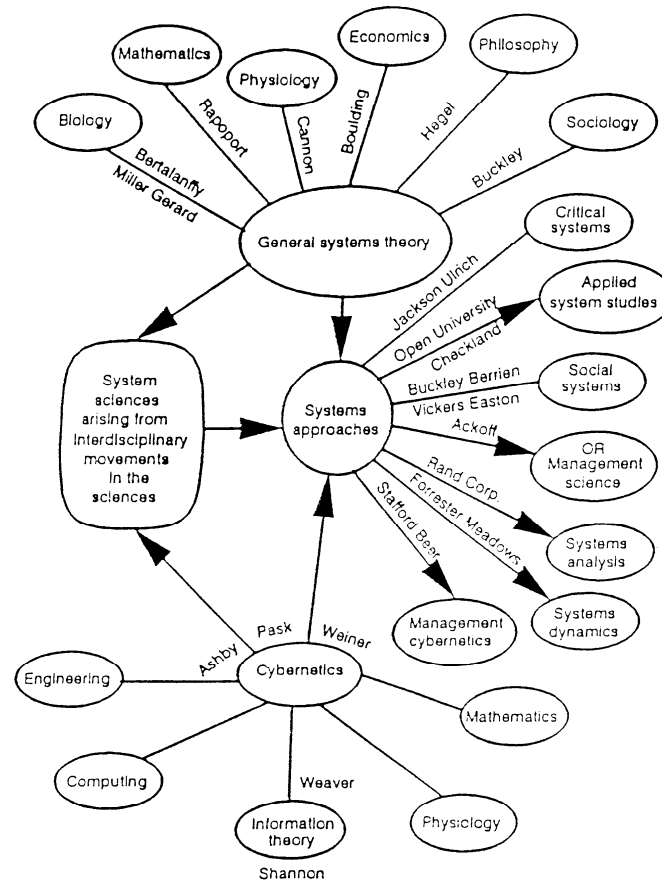
(1996) comment that “the emphasis is now on people as part of larger systems, on culture in nature, on the cultural construction of nature and on species co-existence and sustainable development”. These alternative approaches represent a broad paradigm shift towards greater empowerment of local people (Scoones and Thompson, 1994) and recognition that problem solving and management involves bringing together multiple perspectives within ‘human activity systems’ (Checkland, 1981). The focus is on collaboration. Such approaches therefore seek negotiation and dialogue over conflicting interests of the various actors and view natural resource research and management as a cultural, social and political process.

However, despite the move towards new approaches to environmental and natural resource management, research is still dominated by the scientific disciplines (Woodhill and Roling, 1993; Nassauer, 1995) and as pointed out by Woodhill and Roling, being holistic is more than simply forcing together the perspectives of different disciplines. An interdisciplinary approach also requires new languages and shared conceptual frameworks. While fields such as agricultural and development studies are increasingly not only recognising, but also putting into practice, new approaches to research and ‘real world’ environmental issues, (see for example, Department for International Development, 1999), many scientists in the environmental disciplines remain resistant to change. Appleton (1996) has postulated that the reluctance of the science and the humanities to come together is to do with recognition that to mix them may result in the worst of both worlds. However, as commented on by Checkland (1994) “We all like our normal, unexamined mental furniture. Living with it is like sitting in a comfortable armchair, our feet in warm slippers. Such furniture is difficult to shift.”

3.2.3 From ‘hard’ to ‘soft’ systems thinking

The initial work on systems theory was viewed by von Bertalanffy and his colleagues as something which could be applicable not just to organisms, but also more widely to wholes of any kind. This initiated the new field of systems research and the Society for General Systems Research was established in 1954. Although originally perceived as a way of improving communications between disciplines this was not the case and many different systems approaches, within a range of disciplines, have evolved since the publication of General System Theory in 1968 (see figure 3.1).

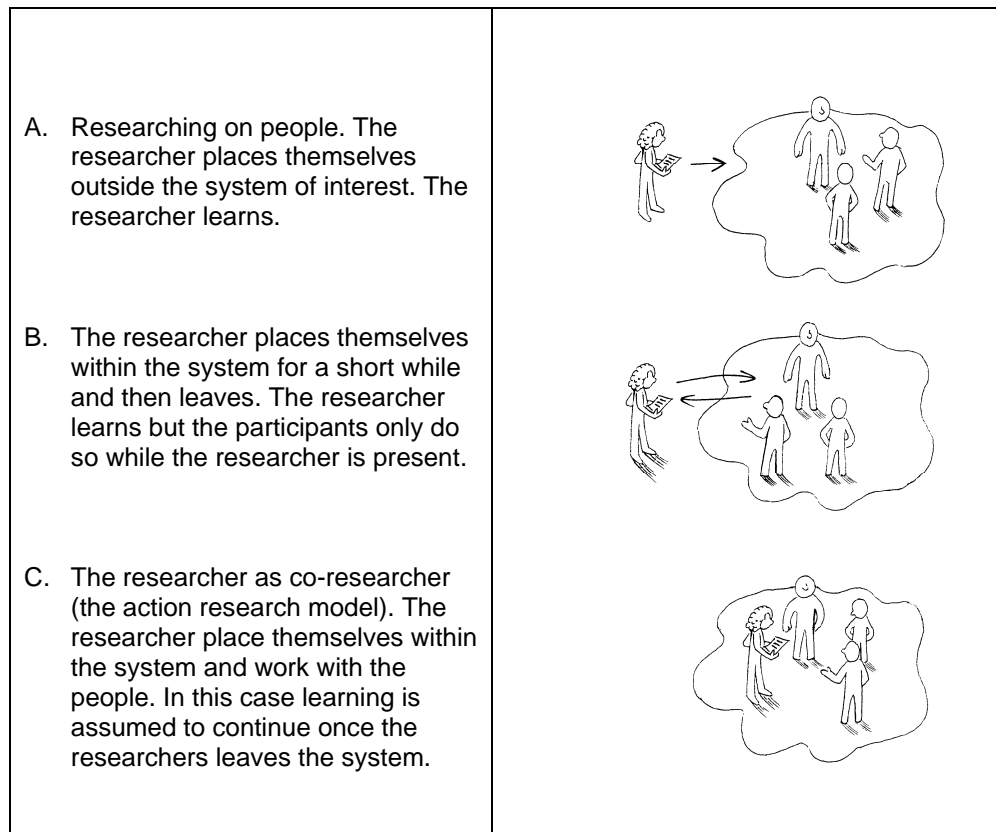
Figure 3.1: Different Traditions within Systems Thinking and Practice. (Ison, 1993a)



Systems thinking was originally based on a positivistic or mechanistic approach whereby the world was perceived to contain systems which could be 'engineered' to work effectively (Checkland, 1997). Such 'hard' approaches were and still are, heavily dependent on mathematical modelling. However, it became apparent that the traditional applied systems approaches, found in the disciplines of systems engineering (systems dynamics and systems analysis) and operations research, were incapable of dealing with ill-defined 'messy' problems involving humans (Ison, 1993a). Thus, in the 1970s and 1980s, systems thinking became more systemic, adopting an 'action' research approach in an attempt to find better ways of tackling messy ill-defined problems (Checkland, 1997). Checkland identifies three main strands of work possessing the key characteristics of systems thinking. That which deals with systems in nature, carried out by biologists and particularly ecologists; that carried out by engineers who create designed systems and the new

kinds of systems based on models of the real world, which may be used to explore purposeful action and which are of particular interest to those involved in management. Within these new systems traditions, the researcher places themselves as far as possible within the system rather than being an objective observer of a system, see figure 3.2.

Figure 3.2: The Relationship between the Researcher and the System of Interest. (from an idea by Dr. A. Lane)



The 'means-ends' framework of 'hard systems' was particularly challenged by the work of Checkland with the development of 'soft' systems thinking (Checkland 1981; Checkland and Scholes, 1990; Checkland and Haynes, 1994). He coined the term 'human activity systems' (Checkland, 1981), for systems which may only be described from a particular person's viewpoint or world view. Whereas in 'hard' systems thinking the system being observed is considered as being separate from the observer, with 'soft' systems the 'system' is not perceived as existing in the outside world but as something constructed by humans. The soft system methodology he developed from this new thinking therefore places emphasis on the way in which humans make sense of their world and processes of learning. As

noted by Pretty (1994), the 'soft' in soft systems is associated with multiple perspectives on a situation. Table 3.1 identifies the main differences between hard and soft systems traditions.

Table 3.1: The characteristics of hard and soft systems traditions.
(Adapted from Ison, 1993a).

| <i>HARD SYSTEMS TRADITION</i> | <i>SOFT SYSTEMS TRADITION</i> |
|--|--|
| Seeks efficient achievement of goals or objectives. | Goal seeking seen as an inadequate explanation for much of what goes on in human affairs. |
| Takes goal-seeking to be an adequate model of human behaviour. | Does not assume that the complexity of the world can be captured in systemic models. |
| Assumes world contains systems which can be engineered and modelled. | Regards systems models produced within the hard tradition not as models of "X" but as models of the logic of "X". |
| Talks the language of problems and solutions. | Views system models as models relevant to arguing about the world, rather than models of the world, leading to learning, replacing and optimising. |
| | Talks the language of "issues" and "accommodations" rather than "solutions". |

Although contrasts can be drawn, it should be noted, however, that it is not a case of 'hard' systems or positivist approaches being 'wrong', and 'soft' approaches being 'right' as both will have their place. McClintock (1996) offers the metaphor of Systems as "a 'toolkit', where choices of concepts, methodologies and methods become available" which enables the researcher to focus on using the concepts of systems, rather than thinking in terms of 'a system' or differentiating between hard and soft systems. However, for dealing with complex 'real' world issues, systemic approaches and 'soft' systems thinking may be viewed as being more useful than 'hard' systems approaches (Ison and Blackmore 1997).

3.2.4 Systems thinking and landscape research

If landscape is to be researched in a holistic way then it may be argued that it requires an understanding of environmental 'problems' as being the result of

complex processes and interactions between the landscape and humans and between humans themselves. Thus environmental 'problems' cannot be treated as being something independent of their human context, i.e. as something 'out there' which can be researched and for which a 'true' and final solution may be found. They are the result of a process which involves many different perspectives. Like hedgerows, the concept of 'landscape' is itself cultural. Landscape may be viewed not as being something tangible and 'real' that can be observed objectively, but a concept which has been mentally constructed by humans. That is, the 'system' depends on where an individual, with their particular view of the world, draws their boundary. Asking boundary setting questions is one means for exploring environmental or landscape issues (see Ison and Blackmore, 1997). The boundaries will be drawn differently by different people; thus what a scientist may be defining as a particular landscape may not reflect what local people define as a particular landscape.

Once the human dimension is included, it may be argued that rather than the landscape being viewed as a set of ordered hierarchical levels with one level controlling the one below it as described by Forman, (1995) and Naveh and Lieberman, (1994), it may be viewed as consisting of different systems of interest dependent on where the boundary is drawn and who draws the boundary. Different systems of interest will each have emergent properties, i.e. properties which can only be observed when looking at that particular scale or boundary. Each system of interest, while being connected to and influenced by their environments, will not necessarily have control over one another and are not necessarily subsets of one another, rather they operate more as a network. Further, landscape study is an on-going iterative process, as landscapes are not static but dynamic. What may be perceived as an environmental problem today may not be considered in the same way by future generations.

3.2.5 Participatory approaches to researching the environment: Systems thinking in action.

Soft systems approaches to research will generally be characterised by participatory methods. Participatory approaches have been widely used for many years in the field of development studies as the result of a growing realisation since the mid-1970s that meaningful participation by rural people in development projects is essential to their success (Oakley, 1983; Ison, 1993b).

Participation in research projects involving decision making and problem solving may take many forms. In such research, the usual distinction made between those 'doing research' and those being researched may often be blurred (see, Reason and Heron, 1986; Webber, 1993).

Pretty (1994) identifies seven ways in which people may participate in projects (see Table 3.2). Participation does not simply involve a single method or technique. In their review the Countryside Commission (1998) identify over 100 different approaches to participation, ranging from stakeholder analysis, consensus building techniques, networks, surveys and cognitive mapping to visioning and citizen juries.

The advantages of taking a participatory approach are becoming widely recognised. Participation is a well accepted principle in many local public service sectors in the UK, and is becoming increasingly accepted as a way forward in environmental issues (Countryside Commission, 1998). Following an extensive review of the literature on participation in the countryside, Warburton (1998) comments that it can provide locally appropriate projects; promote care for the environment; reduce the potential for conflict; strengthen community relationships and capitalise on local human resources.

Encouraging participation and consensus building approaches may be viewed as necessary in order to implement practices which are politically feasible and adapted to local circumstances. For example, work by Ingram (1991) on habitat, and the visual and recreational values of wildlands suggests that balancing commercial forestry and conservation needs will require adaptive, site-specific management which will prove difficult unless local communities become more politically empowered.

Table 3.2: A typology of participation: how people participate in development programmes and projects. (Source: Pretty, 1994).

| TYPOLOGY | COMPONENTS OF EACH TYPE |
|-----------------------|---|
| Passive participation | People participate by being told what is going to happen or has already happened. It is a unilateral announcement by an administration or project management without any listening to peoples responses. The information being shared belongs only to external professionals. |
| Participation in | People participate by answering questions posed by extractive researchers using questionnaire surveys or similar approaches. People do not have the opportunity to |

| | |
|---------------------------------------|--|
| information giving | influence proceedings as the findings of the research are neither shared nor checked for accuracy. |
| Participation by consultation | People participate by being consulted and external agencies listen to their views. These external agencies define both problems and solutions and may modify these in the light of peoples responses. Such a consultative process does not concede a share in decision-making and professionals are under no obligation to take on board peoples views. |
| Participation for material incentives | People participate by providing resources, for example labour, in return for food, cash or other material incentives. Much on-farm research falls in this category, as farmers provide the fields but are not involved in the experimentation or the process of learning. It is very common to see this called participation, yet people have no stake in prolonging activities when incentives end. |
| Functional participation | People participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organisation. Such involvement does not tend to be at early stages of project cycles or planning, but rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators, but may become self-dependent. |
| Interactive participation | People participate in joint analysis, which leads to action plans and the formation of new local institutions or the strengthening of existing ones. It tends to involve interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured learning processes. These groups take control over local decisions and so people have a stake in maintaining structures or practices. |
| Self-mobilisation | People participate by taking initiatives independent of external institutions to change systems. Such self-initiated mobilisation and collective action may or may not challenge existing inequitable distributions of wealth and power. |

The National Trust (1995) also comments on the need to involve interest groups in a more participatory approach and notes that “conservation is no longer an activity undertaken by specialists on behalf of society”. However, as Warburton (1998) points out, although attitudes among professionals are changing “most development and conservation work is still done conventionally, in an expert-dominated, externally-driven and exclusive manner.” She calls for a stronger input by professionals, genuine commitment to participation and dialogue between local people and experts. Goodwin (1998) also expresses concern that top-down approaches to participation can fuel public mistrust.

Within the area of agricultural extension work attempts to get away from the traditional linear 'transfer of technology' models whereby research is passed from the researcher to the user via an intermediary in a linear process (see the review in Kersten, 1995) have led to an emphasis on 'action' research' whereby the researcher becomes actively involved in researching with people and communities (as shown in figure 3.2). Many of the more recent systems based approaches are concerned with moving away from researching on people and towards researching with people (McClintock, 1996). The Farmers First view (Chambers, Pacey and Thrupp, 1989) for example, advocates equal partnerships between rural people, researchers and extensionists (the intermediaries between the researchers and the rural people). However, this view assumes that there is an identifiable body of local knowledge which may be taken from its context and readily integrated with scientific knowledge. It emphasises consensus solutions to well defined problems. This approach has been criticised (Pretty, 1994; Scoones and Thompson, 1994) as although local people may be actively involved in a project, participation is superficial and does not take into consideration that local and non-local people may have very different and often conflicting interests and goals and an unequal access to resources. Such an approach therefore leads to rural or local knowledge being devalued. Scoones and Thompson (1994) cite the example of the way that local knowledge has been devalued in agroforestry, which has been 'scientised', i.e. taken away from the farmers who have practised agroforestry techniques for centuries, re-packaged and then fed back to farmers through extensionists, resulting in a loss of the ability of researchers and extensionists to recognise the value of traditional techniques and practices.

Further, techniques for managing stakeholder interests and conflicts are not well developed and although a participatory approach can open up communication, it does not necessarily result in consensus or open dialogue (Open University, 1996a). Montgomery (1996) suggests that participation may not be in the interests of all stakeholders and may therefore result in confrontation. For example, people with 'expert' knowledge may be reluctant to acknowledge that there are alternative views to a problem or that other peoples knowledge is relevant. It may also be difficult to identify distinct groups as required by this type of analysis, as social groups tend to be far from distinct with people frequently belonging to several identifiable groups. Further, participation does not necessarily deal with hidden agendas and participation in a project can fail if the stakeholders have different or

conflicting expectations of their roles (Overseas Development Administration, 1995).

The degree to which the interests of the less powerful groups are addressed is likely to depend on the type or extent of participation. For example, participation which involves the 'experts' seeking the views of the various interested groups but which does not carefully consider who it is addressing, and does not actively involve them in the decision making processes may have limited success. Pretty argues that nothing less than functional participation (see table 3.2) will do and that for projects to succeed local people themselves should carry out investigations and analysis. Ison (1993), Kersten (1995) and McClintock (1996), also share this view which recognises that local peoples knowledge, which may have been acquired over time as a result of years, or even centuries of trial and error 'experiments', is equally of value as that of researchers or 'experts'. In such approaches where research is carried out with people rather than on people, inequalities of power, access to resources and potentially different world views are recognised and local skills and knowledge are viewed as being interwoven with cultural, ecological and social features (Scoones and Thompson, 1994). Proponents of this view seek collaboration, negotiation and dialogue over competing interests. However, such methods are intensive in their use of human and financial resources and may therefore not be feasible within a small scale project.

3.3 CONCLUSIONS

This chapter has set out the theories and ideas that formed the context for this research. It has discussed the need to bring the science and the human aspects of landscape together and examined developments in systems thinking and participatory approaches to the environment, taking the example of developments in agricultural research.

The discipline of Landscape Ecology offers an opportunity to adopt an alternative more systemic and integrated approach to researching landscapes by linking landscape and culture. However, the cultural dimensions of landscape cannot only be viewed by positivist traditions and researched using only mechanistic approaches. As identified by Naveh (1995), the epistemological (how we know what we know) limitations of formal quantitative studies become particularly

apparent when dealing with cultural landscapes. Further, as noted by Appleton (1996), in bringing the science and non-science together it remains important to realise that we do live in a world of specialists, that there are divisions between fields of knowledge. However, it is equally important to recognise there are different ways of knowing about the world and the limitations of all types of knowledge.

Participatory methodologies, which involve bringing together as many different perspectives and interests as possible and where processes for group enquiry and learning are emphasised, offer an alternative approach to researching cultural landscapes. Such methods place an emphasis on the processes involved rather than any particular 'correct' final solution. They provide mechanisms and processes for learning and decision making that focus on the human dimension of environmental management issues. Participatory research is about being inclusive rather than exclusive.

Within this research hedgerows are considered in their cultural context and as part of the Total Human Ecosystem (Naveh, 1995 and 1998). People are viewed in a relational context; as having a relationship with their environment and a relationship with each other. Although an 'action research' approach has not been taken in this study, in practice the type of approach taken will depend on what the researcher is trying to do. I have, as far as possible, attempted to place myself as a researcher within the system boundary. The 'soft' systems approach taken moves away from 'expert' knowledge being viewed as something rarefied or exclusive. Professionals or experts are viewed as contributing to, rather than dominating, dialogue about landscape and change. Rather than focusing on explaining people's behaviour or examining conflicts, this research is about working together to bring about our common landscapes of the future. It is about redrawing the system boundaries to include the people as part of the system. The following chapter moves on to set out the research process in detail.

CHAPTER 4

THE RESEARCH PROCESS: TAKING A SYSTEMS APPROACH TO RESEARCHING HEDGEROWS IN THE LANDSCAPE

“Building more specific cultural principles in landscape ecology requires thoughtful development of methods that reside in the traditions of no single discipline but grow from the purpose of the work,” (Nassauer, 1995).

The theoretical perspectives and work of other researchers presented in chapter 3 informed the choice of the approach taken in this research. Taking a systems approach to research means using systems thinking to tackle researching a problem or issue. This chapter sets out the development of the research strategy and how the research proceeded. Part 1 discusses qualitative research and the use of grounded theory while part 2 sets out how the research was conducted.

4.1 FORMING THE RESEARCH STRATEGY

The approach taken in this research considers people in their own personal ‘real world’ setting, for example, the farmer on their farm. Consequently it takes a very different form from that of controlled experimental research. The kind of control that experimental research requires is generally neither feasible nor ethical when researching people in everyday settings. As by Robson (1993) commented “one of the challenges about carrying out investigations in the ‘real world’ is in seeking to say something sensible about a complex, relatively poorly controlled and generally messy situation.” The usual requirements of the controlled experiment, such as statistically representative random samples are frequently not possible or appropriate for such research. Despite this, there remains a tradition of working outside the laboratory with quantitative rigour similar to that found in the laboratory and this is apparent in the field of social research, including that on environmental and landscape perceptions. Although rigour is necessary in any kind of research, the type of rigour demanded by the scientific method is not necessarily possible or appropriate when researching human relationships.

4.1.1 Researching human relationships with landscape

An understanding of human perceptions has been recognised as being fundamental in any attempts to understand the complexity of interrelationships between people and the environment (Whyte, 1977; Naveh 1995; Nasseur, 1995). Research into environmental perceptions focuses on human-environment interactions where people's choices and behaviour are viewed as major forces in shaping the environment. The role of this type of research is to increase the understanding between different groups of people, to record and/or preserve local knowledge, for use as an educational tool and as an agent for change.

Despite the difficulties involved in trying to measure landscape perceptions in an objective manner, many studies exist which attempt to do this, (see Whyte, 1977; Sinha, 1995). Although some researchers favour a more qualitative approach (see Sinha, 1995, for examples), these approaches to perception studies are frequently based on 'scientific' forms of enquiry often looking at the preferences of large numbers of people. For example, they involve the use of groups of students being shown photos and questionnaires, followed by the use of statistics to analyse their preferences. Techniques pioneered by researchers such as Likert (1932) and Osgood, Suci and Tannenbaum (1957) for measuring attitudes or considering peoples beliefs and values, are also commonly used. These quantitative and survey based approaches to landscape tend to focus on one particular aspect of landscape perception, such as visual, emotional or behavioural aspects and on a particular sector of the population. They are frequently concerned with peoples' response to landscape as an observer or 'outsider' rather than attempting to gain a more holistic view and an understanding of the relationships and interactions people have with their environment. The concern of this study was to take an in-depth look at the relationships that people have with their environment (in this case hedged landscapes) and to ask whether this was different for different people. This also inevitably involved researching the relationship that people had with each other.

4.1.1.1 The Importance of Relationships

The concept of relationships rather than values is central to the research. Peoples' values, a term which has many different interpretations depending on the purpose

of the research, have been the subject of study by social scientists for many years in the belief that they are at the root of peoples' attitudes and behaviour (van Deth and Scarborough, 1995). Burgess and Gold (1982) have considered environmental values as being represented by two contrasting theoretical approaches - one which views values as an absolute quality, whereby their worth is viewed as being intrinsic, and one where they are seen as being relative, i.e. assigned on the basis of comparative assessment. In their concept of 'valued environments' they view values as being dynamic whereby, through the generations, preferences for different types of environments have come in and gone out of fashion. However, values are frequently viewed as something we place on objects detached from us.

On the other hand, the term 'relationship' encompasses the way we interact and engage with an environment of which we are an integral part. In systems thinking, the properties of the parts can only be understood in the context of the larger whole. Capra (1996) comments on how what we call a part has been shown by quantum mechanics to be "a pattern in an inseparable web of relationships." Whereas in more mechanistic paradigms the world is viewed as a collection of connected objects, in the systems paradigm the objects are themselves recognised as networks of relationships and these networks are themselves embedded in larger networks. As Capra (1996) notes "for the systems thinker, relationships are primary". Rather than thinking in terms of beliefs, attitudes and behaviour towards an external environment or object such as a hedgerow, we can think in terms of an interconnected web of relationships. We place ourselves within the system boundary rather than outside it. This moves away from thinking in terms of what humans do to the environment and what may be 'right' or 'wrong' which comes from thinking in terms of the environment as an object, to thinking in terms of people within an interconnecting web of relationships.

Viewing reality as an inseparable network of relationships has implications for ways of researching. No longer is the researcher an objective observer of the world, placed outside the system, therefore, epistemology, i.e. the process of knowing or how we know what we know, has to be included. In terms of this research I have to acknowledge that I will bring to the research my own personal view of the world which will inevitably influence what I do and the way I do it and any 'findings' can only be my perspective. Research based on systems thinking, therefore, does not fit neatly into the conventional research approaches to landscape.

4.1.2 Taking a qualitative approach

“Quantitative analyses are not suitable medium for discovering feelings and meanings for environment”. (Burgess, Limb, and Harrison, 1988a)

As Robson (1993) points out, the type of research question should determine which approach is most appropriate. The aims of this research were to consider peoples' relationships with hedgerows and each other, in their context or 'real world' setting - to consider different peoples perspectives or systems of interest and where they were drawing the boundaries.

From these aims the key features required of the research strategy for tackling the very general initial question – “What relationships do people have with hedgerows?” were identified. These were:

- That the research should be undertaken as far as possible in the 'real world' setting rather than as a controlled experiment.
- A key feature should be that the data, i.e. the people's own views, should be allowed to 'tell the story';
- The purpose of the research should therefore generate ideas rather than to verify some pre-existing theory;
- The approach should be participatory in the sense of involving different groups of people (stakeholders) and their potentially different perspectives.
- the methodology used should be applicable in different landscapes/cultures.

Robson (1993) identifies three main traditional research strategies, experiment, survey and case study. Both experiment and traditional survey techniques emphasise quantitative techniques and the positivist 'scientific' method, where the position of the researcher is as an objective observer and therefore inappropriate for what I was attempting to research in the way I was attempting to research it, i.e. I did not wish to treat people as objects and did not view myself as the detached researcher. Neither did the research strategy fit with conventional case study approaches (for example Yin, 1989). Rather than acquiring detailed knowledge about a single 'case' or small number of 'cases' I wished to use data from a variety of available sources to gain as many peoples views as possible. To attempt to perceive the world as others do means accessing the interpretations and common-sense knowledge of the people being studied (Denzin, 1997). Research where

hypotheses are established and then tested was therefore unsuitable (Seidal and Kelle, 1995). Taking this position it follows that it is only possible to gain meaningful hypotheses and theories by observing, listening and recording people in the field first rather than entering the field with pre-constructed hypotheses. Linclon and Guba's (1985) view of research as 'naturalistic enquiry' (see table 4.1) possesses many of the features key to this research.

A key element of 'naturalistic enquiry' is that theory should be firmly grounded in the data. Grounded theory is an approach pioneered by Glaser and Strauss (1967). Their approach has been adapted and used extensively, particularly in the area of health research from which it came (see, Glaser, 1993). Its founding principles fit in well with the requirements of this research. Grounded theory has also been cited as being particularly good where there is little or no existing theory (MIM61U Study Guides, 1996) as is the case for research on the human or cultural aspects of hedgerows.

Table 4.1: Characteristics of ‘naturalistic enquiry’ (source: Robson,1993, adapted from Lincoln and Guba, 1985)

1. *Natural setting*: research is carried out in the natural setting or context being studied.
2. *Human instrument*: the enquirers and other humans are the primary data gathering instruments.
3. *Qualitative research methods*: tend to be used (though not exclusively) rather than quantitative methods because of their sensitivity, flexibility and adaptability.
4. *Use of tacit knowledge*: tacit (intuitive, felt) knowledge is a legitimate addition to other types of knowledge.
5. *Purposive sampling*: is likely to be preferred over representative or random sampling, as it increases the scope or range of data exposed and is more adaptable.
6. *Inductive data analysis*: preferred over deductive as it makes it easier to give a fuller description of the setting and brings out interactions between enquirer and respondents.
7. *Grounded theory*: preference for theory to emerge from (be grounded in) the data.
8. *Emergent design*: research design emerges (unfolds) from the interactions with respondents.
9. *Negotiated outcomes*: preference for negotiated meanings and interpretations with respondents.
10. *Case study reporting mode*: preferred because of its adaptability and flexibility.
11. *Idiographic interpretation*: tendency to interpret data idiographically (in terms of particulars of the case) rather than nomothetically (in terms of law-like generalisations).
12. *Tentative application*: need for tentativeness (hesitancy) in making broad applications (generalisations).
13. *Focus-determined boundaries*: boundaries are set on the basis of the emergent focus of the enquiry.
14. *Special criteria of trustworthiness*: equivalent to reliability, validity and objectivity, which are appropriate to the form of enquiry.

4.1.3 Grounded theory

“Grounded theory is a demanding Research Strategy not to be taken lightly”
(MIM61U Study Guides, 1996)

Grounded theory emerged out of attempts to close a perceived gap between theory and research in the social sciences and from a desire to generate useful theory which was relevant to the people involved in the research. Glaser and Strauss (1967) argued that within social research, there was an over emphasis on verifying theories at the expense of discovering what concepts and hypothesis are relevant for a given research area. They therefore presented an argument for grounding theory in the social research itself based on the following notions :

- that conventional approaches, where research is carried out to verify theory and theories are deduced from prior assumptions, result in ungrounded assumptions which can lead researchers astray;
- many case studies using conventional approaches simply embroider major theories, adding little or nothing to them;
- that advances in qualitative methods and attempts to make sociology a ‘science’ had resulted in over zealous testing of the “facts”. Where qualitative methods were used, they were still couched in the terms of quantitative methods, such as testing , proving etc., and used precise methods. Being systematic and validation were emphasised at the expense of theory generation;
- that researchers were not trained to generate theory from the data which helps explain the data, but merely to research and verify existing theory;
- that researchers cannot be divorced from the process by which theory is generated, and that doing so leads to forced connections between the theory and evidence;
- that theory generation can be blocked by focusing on verification;
- that generating a theory involves a *process* of research.

However, it should be noted that Glaser and Strauss’s principal criticism was a perceived over emphasis on validation rather than a clash between qualitative and quantitative research methods and that in their 1967 publication they set out a grounded theory approach for both qualitative and quantitative data.

4.1.3.1 Grounded theory in practice

Like logically deduced theory (i.e. theory which is deduced from prior assumptions), grounded theory can take many forms. For example, it can be a well-codified set of propositions or a running theoretical discussion using conceptual categories and their properties. It is not the form it takes which makes it a theory, but its ability to predict or explain.

The emphasis within grounded theory lies on theory as process, i.e. something which evolves and develops rather than a perfect end product. The approach is iterative and involves an open form of enquiry where the methods and means of collecting data are flexible. Different data are recognised as providing different perspectives. For example, different contexts and a variety of sources (e.g. texts, interviews, paintings, stories, videos) may be used to provide information. These 'slices of data' represent different perspectives i.e. "different modes of knowing that must be explained and integrated theoretically" (Glaser and Strauss, 1967) rather than tests of each other. As it is the categories that the data generate, rather than the data themselves, which are important, even seemingly trivial data can be of use. Although such data may be difficult to use for validation purposes, they can be very useful for generating theory. Furthermore, accurate evidence, the kind of evidence and number of cases, is not as important for generating theory (as in conventional research), as a single case can confirm a conceptual category or property and finding more cases can confirm that indication, i.e. each case will bring a different perspective to build up an overall picture. Evidence and testing modify theory, rather than destroy it, and so add to its richness. The aim of the research is to generate ideas and build theories, with the researcher being interested in relationships between responses rather than their magnitude, which would require a different approach.

4.1.3.2 Features of the grounded theory research process

Process in grounded theory means both the process of analysis and looking for process in the study. It is purposeful action/interaction, which is allowed to change according to prevailing conditions.

Three main stages operate in the research process, theoretical sampling (data collection), analysis and theory building.

Theoretical Sampling. This is the process of collecting data from which theory will be generated. Theoretical sampling is purposeful sampling. It is controlled by the emerging theory and provides constant direction to the research. The starting point may be a very general perspective, subject or problem and initial decisions are not based on a preconceived theoretical framework. The researcher is guided by gaps in her theory and by research questions suggested by previous responses. Comparison groups are selected for their theoretical relevance. Constant analysis is required to see which direction should be chosen next. Sampling stops when a category becomes “saturated” i.e. when no additional data can be found to develop a particular category further. Random sampling is not necessary for data collection. Whereas statistical sampling is used to obtain ‘accurate evidence’ for verification and is based on techniques of random and stratified sampling, grounded theory uses the concept of the “adequate sample”, which depends on how widely and diversely the researcher needs to select data in order to ‘saturate’ the categories. Issues of sample bias which are found in statistical sampling are treated as “conditions changing the relationship which should be woven into the analysis” (Glaser and Strauss, 1967). However, if it becomes necessary to describe the magnitude of a relationship, then random sampling and a systematic observation procedure become necessary, as theoretical sampling can only state the relationship and not its magnitude.

Analysis. This takes place alongside data collection and begins as soon as data starts to be collected. The information is searched for incidents which fit a category and which may therefore be coded. There has been much debate in the literature about the process of coding. As Araujo (1995) points out, there is as yet no consensus among researchers as to what a code is or the role it plays in analysis. Seidal and Kelle (1995) for example, view codes as “heuristic devices for discovery” with three operations in its process:-

- Noticing relevant phenomena.
- Collecting instances of these phenomena.
- Analysing these phenomena in order to find commonalties, differences, patterns and structures.

Alternatively Corbin and Strauss (1990) and Strauss and Corbin (1990), who produced their own variation on the grounded theory approach, identify three stages of coding:-

-
- Open coding: where the data are compared for differences and similarities which are assigned to categories and given conceptual labels. The concepts may then be looked for in further data and checked to see what properties they have. The categories and their properties then become the basis for sampling.
 - Axial coding: where categories are related to sub-categories and relationships are tested against the data to develop further categories. If new data coming in do not fit the hypothesis generated from previous data, then the hypothesis should be revised accordingly (i.e. verification by incoming data). The full range of variation in a phenomenon can be explored by looking at the conditions under which it is occurring.
 - Selective coding: Where categories unite under a core category. This occurs at a later stage of the study and answers the question “ what is the main analytical idea of the research?”.

Within grounded theory, coding is the central prerequisite for constant comparison, an essential element of the process of analysis. Memos (notes) keep track of comparisons and these notes form the basis of the emerging theory. This is an essential process for moving from coding to writing. Categories are reformed as properties emerge and so guide the sampling. Reflection and analysis is ongoing throughout the research and all apparently relevant issues are incorporated into the next set of interviews and observations.

Theory building. As the theory develops, existing theory and the broader contextual issues may be drawn on to add to the theory. Research design and analysis is an on going, iterative process guided by the developing theory. Working on concepts that come out of the information gathered means that developing theories are firmly grounded in the actual data.

Within grounded theory a distinction is made between different levels of theory. As the coding procedure develops and theories are constructed the focus of the research narrows. It may then be possible to move from a lower level of theory, a substantive theory, consisting of ideas which are highly relevant to the particular case under study, to a more formal or higher level of theory, which may be more widely applicable. Glaser and Strauss (1967) advise the use of the constant comparative method to compare text under a particular category to see similarities and differences. This procedure produces subcategories or new categories, thus focusing theoretical statements to end up with a single phenomenon or core

category. Researcher bias is countered by requiring a concept to be relevant to an evolving theory, “grounding concepts in the reality of the data” (Corbin and Strauss, 1990). However, some researchers suggest (for example Turner, 1981) that quantitative techniques, wider surveys or gathering feedback from other people familiar with the field of research may be used to increase confidence in the theory. The validity issues which surround grounded theory are common to qualitative research generally and particularly this type of naturalistic enquiry and are discussed in the following section.

4.1.4 Validity issues

Within qualitative research an agreed meaning for what constitutes ‘validity’ and ‘reliability’ has not yet been achieved. From a constructivist’s position, different people or ‘actors’ will perceive ‘reality’ in different ways and thus multiple realities ‘exist’, it is therefore impossible to judge from outside. In this case the research may be viewed as a construction of the researcher’s reality. However, Kelle and Laurie (1995) argue that almost every presentation of qualitative findings embody an ‘implicit realism’. At the other extreme, this type of research is not seen as being able to claim any validity as the usual ‘rigour’ of experimental research cannot be applied.

4.1.4.1 Credibility

Although Strauss and Corbin (1990) view the grounded theory procedure as meeting the criteria for doing “good Science”, ie. significance, precision, rigour, and verification, problems exist when trying to apply the usual validation criteria to ‘naturalistic’ forms of enquiry (Lincoln and Guba, 1985). The criteria for judging quantitative research has been viewed as inappropriate for qualitative research (Hammersley and Atkinson, 1995; Simonvic and Bender, 1996; Baxter and Eyles, 1997). The investigation of many types of ‘human centred’ problems would be impossible to do in conditions which are controlled by the researcher. This may be seen as being particularly the case for many of the human aspects of environmental problems. It is, however, possible to obtain a representation or model of the ‘real-world’ process.

The focus of the naturalistic form of enquiry is on discovery and the results of the research are “the outcome of the researcher’s work with the data and her or his

interpretations and conceptualisations of data are interwoven in the findings” (Hamberg, Johansson, Lingren, and Westman, 1994). Although hypothesis and theories are generated, the aim is not to test whether they are false or true. The potential influence of the researcher is outwardly acknowledged.

It is not intended in this method to produce results which may be reproduced identically by another researcher or which are necessarily generally applicable. Rather, the approach acknowledges that the ‘findings’ are applicable to that particular situation and that particular researchers perspective. This is consistent with Checkland’s (1981) concept of a ‘human activity system’ where he points out that there will “never be a single (testable) account of a human activity system, only a set of possible accounts all valid according to particular Weltanschauungen” (world-views). Consistency is gained by grouping like with like and by asking questions of a concept such as, how consistently is it found? Or, under what conditions? Because the data are grounded in a particular area and relationships have emerged from the data, there is a closeness of fit between the theory and the data which should result in theory that is highly relevant and hence useful to the research area. There is no correct and final theory as theory can be continuously reformulated according to changing circumstances.

Although validity criteria for qualitative research are required to be different from that of experimental research where theories are open to, and subjected to testing, it is still necessary to have them so that the research process may be judged in some way (Baxter and Eyles, 1997). Appendix 2 shows some of the strategies used for demonstrating rigour in qualitative research in human geography. As Kelle and Laurie (1995), point out, “a result can be provisionally regarded as valid if every possible precautionary measure is taken to avoid mistakes” In this way the trustworthiness of the research can be established, i.e. the extent to which the study is believable and reliable. The objective is to have some measure whereby possible sources of error can be identified rather than to prove that research results match ‘reality’.

4.1.4.2 Grounded theory criticisms

“This commitment to a dialectical iteration between data collection and data analysis is not easy to sustain in practice” (Hammersley and Atkinson, 1995).

Theory generation is the main goal of grounded theory and it is essential that this is recognised to counter criticisms of lack of evidence and verified hypotheses.

Glaser and Strauss (1967) argue that the grounded theory approach should begin with data collection rather than theoretical deduction. Any theoretical propositions are deliberately avoided as they believe that they may hinder theory generation. This approach is criticised by Yin (1989), who argues that, for case studies, theory development at the design stage of a project is essential. However, as Dey (1995) points out, the researcher will inevitably bring some pre-existing knowledge to the study, “an open mind does not mean an empty head” (Dey, 1995). Such knowledge is, however, not used to construct a theoretical model for judging what information is relevant to study, this remains the function of the data.

Languish (1993) takes the position that grounded theory, although offering a useful approach to analysing data, misses the point. He claims that although social scientists may have had a need to defend how they do research, as a result of criticisms over lack of ‘scientific rigor’ in their methods, this is simply a misunderstanding of how scientific research is actually carried out in practice. He argues that “in the philosophy of science, the idea that science consists of attempts to prove hypotheses is as dead as a dodo”. However, while this may be the case for the philosophy of science, in practice, much landscape research is still carried out in this way.

Grounded theory may also be criticised for being positivistic, in that it believes there is something real in the data to be found and for not acknowledging the influence of the researcher, i.e. the researcher is viewed as being able to objectively analyse the data. However, grounded theory has developed since 1967 as a variety of researchers in different disciplines have made use of it (Glaser, 1993 and 1994; Reinharz, 1992; Hunziker, 1995; Simonovic, and Bender, 1996; Paine, 1997). Charmaz (1994), for example, has used grounded theory to look at chronic illness using a social constructivist approach, and comments that “a number of the criticisms of grounded theory reflect an incomplete understanding of the logic and strategies of the method.”

4.1.4.3 Grounded theory controversies

Developments in the use of grounded theory have resulted in Glaser (1993 and 1994) heavily criticising the rigid approach to grounded theory advocated by Strauss and Corbin in their 1990 publication. Glaser, who strongly held the view that theory should not in anyway be forced beforehand, felt that the approach of Strauss and Corbin forced the data to fit preconceived theories. For Glaser the core ideas were seen as more important and he welcomed the way other researchers have developed the core principles in their own way to suit their own research. In Glaser's view Strauss and Corbin ignore the fact that grounded theory can and has been modified by other researchers. He responded to Strauss and Corbin's publication by publicly criticising them in his 1993 publication on grounded theory. The debate is such that some researchers now suggest you should state the type of grounded theory approach you are using (see for example, Paine, 1997). For this study the approach taken was one more consistent with a Glaserian view, whereby the constant comparison is seen as the basis of qualitative theory building and as far as possible the data are allowed to tell their own story. The application of the core ideas of grounded theory are viewed as the basis for analysis, rather than any kind of rigid procedure, although the use of computer aided analysis did bring with it the tendency to formalise procedures.

4.1.5 The benefits and difficulties of using grounded theory

There are many benefits as well as difficulties to using grounded theory as well as difficulties, see table 4.2. Aspects of the research process fit well with taking a systems approach to research. One of the founding principles for grounded theory was that theory should be relevant and understandable to the lay person, a key factor in research involving people from different backgrounds with different types of knowledge. It is unlike other types of qualitative research where large amounts of data are gathered and then analysed. Instead it provides a non-linear, iterative approach requiring constant reflection on the research process. It therefore lends itself to dealing with the complexity of 'real' world issues with ideas or theories being generated from the people themselves and consequently being grounded in their situation.

Table 4.2: The benefits and difficulties of using Grounded Theory

Benefits

Theory is allowed to become “rich, complex and dense” (Glaser and Strauss, 1967), unlike theory in the propositional form, as the theory is allowed to develop.

The research process itself guides understanding.

Allowing concepts and theories to emerge first, checking to see if any existing formal theories fit the theory, avoids forcing theories to fit the data.

Does not claim that there is one theory for an area, i.e. allows for multiple theories. (No one theory can handle all that is relevant).

The researcher is not a passive receiver of information, but is actively engaged in generating explanations - research as process.

Theoretical sampling allows for the fact that the information being gathered may be continuously changing.

The gathering of different perspectives is recognised as part of the research process.

Unlike a questionnaire survey, a depth and richness of understanding may be gained.

As the theory is generated from the ‘real’ situation, it should be viewed by users as being trustworthy, readily understood and relevant.

Providing a readily understood theory should allow for specialists and lay people to work together.

The approach provides criteria for deciding whether or not existing theory is useful, rather than using criteria from existing theory and seeing if data fits, which it is argued, is unlikely to lead to new discoveries (Turner, 1981).

“Grounded substantive theory can give participants in a situation a broader guide to what they already tend to do and perhaps help them to be more effective in doing it”(Glaser and Strauss, 1967).

Difficulties

The material explored should be related to the theory - care needs to be taken not to explore it for its own sake.

It can be a complex and ‘messy’ procedure. Some theories may require further exploration, through more extensive fieldwork, experiment or survey. Such further exploration should, however, be perceived as being useful because it adds to the findings rather than because it is more rigorous method. The most appropriate method for that particular situation should be used, grounded theory is not therefore just a preliminary to a ‘more rigorous’ quantitative approach.

Turner (1981) argues that although grounded theory may be used for both qualitative and quantitative research, it is of most use for qualitative research.

The researchers’ own theoretical framework may cause them to overlook data which disagrees with their way of thinking.

Other researchers’ ‘world view’ may result in criticism of it not being ‘proper’ research.

4.1.6 Uses of grounded theory

Grounded theory has been widely used in the area of health research, the area in which Glaser and Strauss initially developed the approach. However, it has only recently become more popular in the environmental disciplines. For example, Simonovic and Bender (1996) have made use of grounded theory in the production of a computerised participatory decision support system for planning purposes. In the field of landscape perceptions, Hunziker (1995) has used grounded theory to look at perceptions of land abandonment in Switzerland and Paine (1997) and Kersten (1995) have used grounded theory when researching with farmers. There also appears to be a growing interest in grounded theory within the geography discipline (Bailey, White and Pain, 1999; Baxter and Eyles, 1999). Grounded theory offers an alternative to the traditional 'scientific' approaches to researching the 'soft' aspects of landscape. The next section moves on to explain how I put these ideas in practice.

4.2 CONDUCTING THIS RESEARCH

This part of chapter 4 reports on how the research was conducted. The first section sets out how the people involved in the research were identified and the second section discusses early attempts in the research process that informed the final approach. The methods used for data collection and the subsequent analysis of the data collected are then discussed in the remaining sections.

4.2.1 Identifying who has a stake in hedgerows

Within the constraints of a small research project undertaken by just myself, it was my desire to be as inclusive as possible of different people's relationships with hedgerows. Like many natural resources, hedgerows are mostly in the ownership and therefore control of one group of people, i.e. farmers. Yet they are a resource which has benefits for many other groups of people. Stakeholder analysis offered one approach for identifying who should be involved in this research.

4.2.1.1 Stakeholder analysis

As noted in chapter 3, participatory approaches provide platforms for people to make their interests known. They attempt to avoid the most powerful stakeholders dominating a process and to ensure that knowledge is equally shared. A stakeholder is an individual, group or institution that has an interest or 'stake' in an issue or project. It is important to identify those stakeholders who are most influential as they hold the key to any successful projects. Stakeholder analysis is particularly aimed at attempts to deal with complex situations and is one of over 100 participatory approaches documented by the Countryside Commission (1998) in their review. The approach originated from the field of corporate strategic management where it was used to analyse the different interest groups both within and external to an organisation (Open University, 1996a). It may be defined as "an approach for understanding a system by identifying the key actors or stakeholders in the system and assessing their respective interests in that system" (Grimble, Chan, Aglionby, and Quan, 1995). It has been recognised that efforts at environmental management may fail as a result of failure to consider adequately the potentially wide range of perspectives and values held by different stakeholders (Woodhill and Roling, 1993; Grimble et al., 1995; Montgomery, 1996).

The process of analysis involves identifying all the different actors or groups who may have an interest in the particular issue being addressed, categorising them, defining their interests and the likely impacts on them - whether positive or negative, assessing their degree of influence and prioritising them according to their needs. Care is required when defining the system. What or who is included in the system will be dependent on where the boundary is drawn and will potentially affect the outcomes. Also, within any given category there may be many different interests which may or may not relate to other people within that group. According to the ODA Social Development Handbook (ODA, date unknown), particular attention should be given to people or groups whose status may make them invisible to planners.

Grimble et al. (1995) identify six stages of analysis which may be adapted according to a given situation:

1. Identify main purpose of the analysis - i.e. what is the problem? what are the objectives or outputs? who are the relevant decision makers? How will outputs be targeted?

-
2. Develop an understanding of the system and decision-makers in the system - who are the decision makers? What drives the system?
 3. Identify principal stakeholders.
 4. Investigate stakeholder interests, characteristics and circumstances.
 5. Identify patterns and contexts of interaction between stakeholders.
 6. Define options for management.

Table 4.3 shows my list of stakeholders for hedgerows, from my own perspective and background knowledge. It was generated to be as inclusive as possible of all those who I felt held a stake in the English hedged landscape. It included broad categories of people I felt were influential in the management of the English landscape politically or in practice, and those who currently have little say in how the landscape is managed. Farmers may be seen as being the 'key' influences on hedgerow management as they are the owners and maintainers of hedgerows. It is therefore important that their perceptions and views are taken into account when attempting to successfully implement conservation measures. For example, if there is a desire to conserve hedgerows for their wildlife value the way in which the hedgerow and surrounding land is managed is of crucial importance. However, it is also important to consider the ethical grounds on which one group of people may be told what to do by another group of people (Woodhill, and Roling, 1993) and to give a voice to the least influential stakeholders. Hedgerows are also an important feature of our ecological, cultural and historical landscape therefore ecologists, wildlife and heritage enthusiasts, and members of the general public will also have an interest in hedgerows in our countryside. However, within a small research project such as this, it was not possible to include all those felt to have a stake. I therefore divided people into three main groups: farmers (including land owners and farm managers), the public and the experts. The expert group represented those people with a professional interest in hedgerows, for example, researchers, employees of wildlife groups, or farming and wildlife advisors. Although it is impossible to say whether involving different groups of people in this way is inherently valuable, if different people have different relationships with hedgerows and each other, these need to be taken into consideration. The perspectives of these different groups i.e. public, farmers and experts, comprise both a more general group view and the individual's views within that group. Both of these views were investigated in order to examine the relationships between the wider group

view and that of the individuals within the groups and to provide supporting evidence for the categories found in the interview data.

Table 4.3: A Stakeholder Analysis for assessing the potential interests in the conservation and management of hedgerows.

| LEVEL | STAKEHOLDERS | PRIMARY INTERESTS | INFLUENCE ON HEDGEROW CONSERVATION AND MANAGEMENT | POTENTIAL CONFLICTS/COMMON GROUND |
|---------------|--|---|---|--|
| International | Environmental groups International Agencies | Biodiversity, conservation regulation, | Indirect influence through international commitments and directives on biodiversity. | |
| National | Government Conservation Agencies Professional Ecologists and Historians | Legislation, biodiversity, wildlife and heritage protection. | Key influence on protection and management through proposed government legislation for 'key' hedgerows, research and subsequent advice. Provision of grants for hedgerow management. | Biodiversity, heritage and wildlife protection are not necessarily the only criteria for hedgerow protection and management. |
| Regional | Regional Authorities Farming and Wildlife Advisors | Biodiversity, heritage, landscape and wildlife protection. | Limited influence through planning controls, advice and issue of grants. | Extent to which planning authorities take into consideration the views of local people and local groups. |
| Local | Local rural people Local urban dwellers Farmers Local wildlife groups | Maintaining local character and sense of place. Maintaining scenic and heritage landscapes, enjoyment of rural environments and wildlife. Owners and managers, agricultural production. Wildlife enhancement and protection. | Limited opportunities for influence through local, government or NGOs. Limited opportunities for influence through local government and NGOs. Key influence on management. Limited influence on policy and management. | Maintenance of local character may be in conflict with the farming communities interests. |
| | Future Generations | Sustainability, heritage protection. | At the mercy of present day decisions. | Protection for future generations may conflict with desires of current generation. |

4.2.1.2 Selection of the study areas

The English landscape is made up of areas each with their own character. It is the character of a landscape that makes it distinctive. Using computer analysis, the Countryside Commission (now the Countryside Agency) defined 159 areas of England with a different countryside character (Countryside Agency, 1999). The key components to their classification were altitude, landform, ecological characteristics, land capability, surface geology, farm types, settlement patterns, woodland cover, field density and pattern, visible archaeology, industrial history and designed parkland. Type of hedgerows, lack of hedgerows or pattern of hedgerows form an essential part of countryside or landscape character. The original intention when setting out to do this research was to include as many different areas with differing landscape characters as possible. However, in order that the research remained manageable by one person, just two contrasting landscapes, Buckinghamshire and Cambridgeshire were eventually focussed on (see figures 4.1, 4.2 and 4.3).



Figure 4.1: An example of the landscape in the Buckinghamshire study area



Figure 4.2: An example of the landscape in the Cambridgeshire study area.

Figure 4.3: Locations of the English study areas within the UK.



Originally I intended to conduct research in several areas of England with contrasting landscape characters to enable comparisons to be made. However, within the financial and time constraints of a small study it was not possible to cover a wide area of the country. The Cambridgeshire and Buckinghamshire areas were chosen because of their differences, i.e. they provided contrasting landscape characters and farming styles for comparison within the grounded theory process. These areas were also readily accessible from Milton Keynes where I was based. However, both locations were similar in that they were close to the edge of medium sized regional towns. It was felt that this would aid comparisons of the two areas as the people involved in the study would be living in similar situations.

The Buckinghamshire study area was located to the west of Milton Keynes (see figure 4.3) . Within the area there is both arable and stock farming. Although it is located within the planned countryside (see figure 2.2, section 2.2.1), and therefore many of the hedgerows are generally more recent than in other parts of England such as Devon, it is an undulating hedged landscape with relatively small field and

farm sizes compared to those in Cambridgeshire. The Cambridgeshire study area was located to the south of Cambridge where there are few hills and the landscape is much more open in character than the Buckinghamshire study area. Although both areas have been subject to change as a result of increasing mechanisation of farming activities leading to increasing field sizes, in recent years Cambridgeshire farms have also moved more from mixed to arable farming and have therefore retained far fewer hedgerows.

In addition to the interviews in Buckinghamshire and Cambridgeshire areas, a discussion group was carried out in Norfolk. A culturally different landscape in Vancouver, Canada was also studied. These areas (Norfolk and Vancouver) were chosen partly opportunistically and partly because there were local hedgerow projects being undertaken. The farming history and landscape characters of both areas were similar to that of the Cambridgeshire study area. The Canadian study area was also located close to an urban area, just south of Vancouver on the Fraser river delta and provided a contrasting cultural setting, this is discussed further in chapter 9.

Preliminary research

To gain a feel for how people may view hedgerows and to explore a workable approach, initial studies were carried out with members of the public and farmers. Two farmers, four members of the public whose names I had been given by a local conservation officer, and ten friends and members of my family volunteered their time.

Local professionals, who were involved in giving hedgerow management advice to local farmers, were also contacted. The lists of words that people used to describe hedges and hedgerows discussed in chapter 2 and shown in section 2.1, were also collected at this time.

Photographs of hedgerows were used initially with respondents, as an aid to discussion. Photographs have been used extensively in researching landscape perceptions, (for examples, see Sinha, 1995). Research by Shuttleworth (1980) on the use of photography to study landscape perceptions has indicated that there are no differences between verbal responses using photographs and those viewing real landscapes. He concluded that photographs are effective at representing landscapes. Photographs of hedgerows depicting different types of landscapes

were presented to people - a hedged landscape, such as is found locally in Buckinghamshire, a rural Devonshire landscape and a rural Cambridgeshire landscape. The photographs were used as an aid to discussion about preferences for hedgerows in conjunction with an adaptation of the Kepner-Tregoe method for decision making (Open University, 1996a). People were asked to list the things they liked about hedgerows and then asked to distribute 10 points according to how much they valued them.

The photographs did not, however, appear to particularly aid discussion. People who had experienced these different types of landscapes for themselves found it easy to discuss them. Those who had not appeared to find the photos unhelpful when attempting to imagine how they would feel about that landscape type, as it was beyond what they had experienced. This highlighted the need to work with people living in or close to a particular landscape type as experience of the landscape they were discussing did appear to be necessary.

The Kepner-Tregoe method proved unsuccessful as my presence while they were doing it appeared to inhibit them. People also felt unable to list the things they valued about hedgerows and then weight them accordingly. Thinking up the list proved difficult in the first instance and in some cases, the practice of weighting was obviously terrifying as it involved some elementary maths. Perhaps more importantly, people were unfamiliar with ways of looking at things which this method demanded and therefore found what they were being asked to do very difficult. Trying to say which feature of a hedgerow they preferred most appeared impossible for them to do adequately and the temptation was therefore to weight everything equally.

This early attempt demonstrates the way in which, as a researcher I was inevitably influencing the research and that to obtain the type of data I required it would not be possible to work in an 'objective' way. It also made me realise that I would need to adopt a completely different research strategy both in order for people to accept me not as a researcher, but as another person with an interest in hedgerows and to obtain the richness of the feelings that respondents had towards hedgerows. It was my initial attempts at researching with people that led me to the use of a more systemic research strategy and the use of grounded theory for accessing the richness of peoples relationships with hedgerows.

4.2.2 Collecting data for this research

One of the advantages of grounded theory is that it allows for the flexible use of data. This enabled an in-depth study of the views of individual people and a wider analysis of how the different groups viewed hedgerows using many different data sources. Within this research a wider perspective and an in-depth perspective are presented for each group or category.

In this section I discuss the methods used for accessing the respondents who took part in this research, the collection of the primary data, i.e. the data I collected myself for the purposes of this study such as the interview and survey data, and detail the collection of secondary data, i.e. information which was originally collected by other people for a different purpose, such as newspaper and journal articles, Government publications etc.

4.2.2.1 Sample Size

As this research is concerned with discovering new phenomenon through in-depth analysis rather than statistical generalisability, the sample size was not required to be large. For example, just one farmer or member of the public can provide new insights into people's relationships with hedgerows. Also, although the use of computer software for analysis allows for a larger sample, there is still a limit to how much data an individual researcher can handle alone. A large sample is not of value in itself, i.e. it will not necessarily make this research more valid. However, the ability to make more comparisons can help to identify more patterns and hence can add depth to the research.

4.2.2.2 Collecting data for the individual perspectives

For the individual perspectives, unstructured interviews, a group discussion and self-recorded tapes were used. Table 4.4 sets out the different sources of data. The following sections provide greater detail on these activities.

Table 4.4 : Sources of data used to generate the different perspectives

| Public | Farmers | Experts |
|--|--|--|
| Secondary data collection for the wider perspective | | |
| Responses to the 1997 Hedgerow Regulations Consultation document (495 responses) Select Committee on Environment, Transport and Regional Affairs Minutes of the Oral Evidence Hedgerow Regulations 1997, 7.10.1998 Hansard Hedgerow regulations debate – 20.3.97 Media Articles from 1995-1999 including Farmers Weekly Informal face-to-face and telephone conversations Academic literature | | |
| Primary data collection for the wider perspective: 70 survey questionnaires | | |
| Primary data collection for the in-depth perspectives: | | |
| Preliminary data collection including hedgerow words | | |
| <i>Buckinghamshire:</i> 9 Self recorded tapes + 1 in the field; 1 joint husband and wife tape 1 Written response 1 Face-to-face in-depth taped interview. <i>Cambridgeshire:</i> 1 Self Recorded Tape 5 Written responses | <i>Buckinghamshire:</i> 6 in-depth semi-structured taped interviews and farm visits including 1 joint interview with farmer and son Display and stand for collecting views held at the Buckinghamshire Young Farmers Agricultural Show 31 May 1997 <i>Cambridgeshire:</i> 6 Face to face in-depth taped interviews and farm visits | <i>Buckinghamshire:</i> 1 Self recorded tape 4 Face to Face in-depth semi taped interviews <i>Cambridgeshire:</i> 2 self-recorded tapes + written records of telephone conversations |
| Participant observation of a one day Cambridgeshire educational workshop and field trip on hedgerows. | | Participant Observation - European Hedgerow Meeting, Brussels 22-23 May 1997. Hedgerow Seminar, University College Northampton 25.3.98. Hedgerow Conservation: policy, protection and evaluation. University College Northampton, 21 st July 1999 |
| A day visit and 3 hour taped discussion group with a local farmer and his wife, 2 local tree wardens and myself. Norfolk, 10.11.997 | | |
| Canadian Data Collection: (see Chapter 9) | | |
| Canadian visit 27 th May – 4 th June 1998: Visiting the Delta Farmland and Wildlife Trust (DWFT) offices and members 1 tape recorded in-depth farmer and wife interview 3 Farm visits 3 in-depth taped expert Interviews including a joint interview 1 written expert interview 1 tape recorded expert/delta resident interview 1 resident written interview 2 self recorded tapes – BC residents DFWT talk and discussion with board members including farmers, representatives of the local community and wildlife groups. 3 OU Open Day Questionnaires (public) | | |
| (53 documents held within NUD*IST) | | |

4.2.2.2.1 Accessing respondents

Farmers

As commented on earlier, within grounded theory it is not necessary to have statistically representative samples, rather, purposeful sampling is used. The names of the participating farmers were not easy to obtain as a number of the farmer organisations approached were unable to provide me with names of farmers as they were considered confidential. However, members of the 'expert' category for each study area were able to suggest farmers to contact.

Within the grounded theory process data is gathered and analysed as the project proceeds. Initial interviews were carried out with farmers from the Buckinghamshire area. I contacted a selection of farmers with varying farm sizes by letter informing them of the study and asking that if they would like to take part to return an attached slip in a pre-paid envelope (see appendix 3). This approach produced a good response with most of the farmers replying. The names of farmers with and without an interest in the Countryside Stewardship Scheme, a scheme providing grant aid to farmers for hedgerow conservation (see appendix 7), were selected in order to obtain views from those who seemingly had an interest in hedgerow conservation and those who did not.

Following the Buckinghamshire interviews, a group discussion was carried out with a farmer, his wife and two tree wardens in Norfolk. Information from the Buckinghamshire respondents was fed to this group to see what their reactions would be (see section 4.2.2.2.4). The farmer in this instance had a farm that was well hedged with small fields. This was unusual for this area where most of the surrounding farms were unhedged and often consisted of just one large field.

For the Cambridgeshire study names of farmers were obtained through local experts and by recommendation from other farmers. Farmers with an interest in hedgerows and those without were chosen in order to obtain a comparison. However, although efforts were made to contact farmers with no hedgerows, none of them wished to take part in this study. Nevertheless, a variety of farmers, some with several hedgerows and new planting and those with only a few and a preference for large open fields, were finally interviewed. All the farmers were

interviewed face to face and the visits often involved lengthy tours of their farms. Two of the first farmers visited were subsequently asked if they would record taped answers to a questionnaire (see section 4.2.2.2.3) on self-recorded tapes. However, they were reluctant to do so. I therefore decided that this approach would be unlikely to be appropriate for collecting data from this category.

I felt that it was important to visit the farms to gain a more complete picture of hedgerows on their particular farm and the way they managed them. All the farmers were eager to participate and frequently mentioned that they were glad that someone was showing an interest in their views. They demonstrated enthusiasm for the way in which they managed their farm and hedgerows, regardless of what their hedgerows were like or how few they had.

Public

Individual members of the public were selected through local wildlife organisations, personal contacts and recommendations by people interested in this research. They covered a range of occupations although most would be considered as middle class. Six of the nineteen respondents were members of wildlife conservation organisations, but only one had detailed wildlife conservation knowledge. Most of the respondents had not considered hedgerows much, if at all, before having contact with myself. Experiences with the preliminary study indicated that the use of self-recorded tapes (see section 4.2.2.3) with the public category would prevent them from feeling inhibited by me as a researcher. This category were therefore asked to self-record taped interviews. One person also agreed to take a tape into the field and record his experiences [BPSI10]. Obtaining respondents through personal contacts was therefore deemed more likely to prove successful. This proved to be the case. In Buckinghamshire, where I had local contacts, there was a high response rate whereas in the Cambridgeshire study area, where I did not initially have contacts, accessing respondents proved more difficult. The respondents used in the study were eventually taken from a group of people taking part in a hedgerow study day organised by the local Wildlife Trust. Local people were taken on a field trip to an ancient urban hedgerow within Cambridge itself and an ancient rural hedgerow close to the town. I had only had an opportunity to meet the people on the study day and therefore had little contact with them. The response was therefore not as good as that from Buckinghamshire where most people asked had recorded and returned tapes to me. The

Cambridgeshire group also favoured returning the questionnaire with written answers, which meant that they were not as rich as the responses from the Buckinghamshire area.

Experts

The expert category interviewed consisted of local wildlife professionals and advisors to farmers (see table 4.4). As the people within this category are highly identifiable and all my respondents were guaranteed anonymity, I have not detailed them further. More expert respondents were obtained in the Buckinghamshire than the Cambridgeshire area. As with the public category I did not have contacts in the latter area and although I had several informative telephone conversations with experts from the Cambridgeshire area only 2 self-recorded tape interviews were returned although 6 were sent out to experts who had agreed to do them. Several attempts to chase them up proved unsuccessful. The impression gained was that people were willing to help but as busy professionals they did not really have the time. However, it was possible to draw on the literature on hedgerows and the hedgerow legislation discourse for much of the expert view.

4.2.2.2 Face-to-face interviews

Face-to-face unstructured interviews (Open University, 1993-1998) were conducted with professionals, farmers and some members of the public. As far as possible, the questions were non-directive and allowed for free interaction between the researcher and interviewee. Open ended interviews allow for a richness of theory generation as it maximises discovery and description. Full use can be made of the differences between people and new questions can be introduced as the interview proceeds (Reinharz, 1992). Although any form of interview will, to a certain extent, be structured by the interviewer, this type of approach allows for a deeper exploration of peoples' meanings and beliefs and offers access to peoples' ideas thoughts and memories in their own words. However, unlike a highly structured approach to interviewing, where the interviewer asks a standard set of questions in a standard way in an attempt to minimise interviewer bias, the interview could not be easily replicated by another researcher. There is also the problem of personal reactivity (Open University, 1993-1998), where a particular interviewer's interactions with the respondent may affect the research.

Using an interview schedule listing topics to be covered to act as prompts, an informal approach was adopted and the conversation was allowed to develop in any direction around different aspects of hedgerows (see appendix 4). Initially questions that were relatively easy for the respondent to answer and which helped to set them at ease were asked. For example, where the respondents spent their childhood and in the case of farmers, general information about the farm. More sensitive topics were left to the end of the interview when the respondents would be more relaxed. The topics varied slightly between the different respondents depending on which of my categories they fitted into. Farmers, for example, were asked questions concerning hedgerow management on the farm which would have been inappropriate for members of the public.

The interviews lasted between one and two hours, often followed by a farm walk when interviewing a farmer. The latter enabled a quick visual assessment of how the hedgerows on the farm were managed. The interviews were audio-taped, except in two cases where the people were unwilling to allow me to do so, and were transcribed in full. Taping has the advantage of allowing the interviewer to be free to concentrate on the interview and provides a full record of the interview. Although Strauss and Corbin (1990) suggest that it is not essential to transcribe tapes in full, I felt it was necessary to prevent anything important being overlooked. It also guarded against interviewer bias which may be introduced when deciding what information to record.

Although I did not wish to make any initial assumptions about people's relationships with hedgerows, the act of approaching people for their views would indicate to people that I was likely to feel hedgerows were important. I therefore made it clear at the start of the interviews that I was impartial in any hedgerow debate and that I was interested in their views irrespective of what they were. If they had no interest in hedgerows, then that was fine. Although it is likely that people were influenced to some extent by what they believed my views may be, their desire to have a voice concerning hedgerows and the way they became 'lost' in conversation indicated honesty in their responses.

4.2.2.2.3 Self-recorded audio tapes

One of the disadvantages of conducting face-to-face interviews is that they are very time consuming, especially when the research is being conducted in more than one area. Self-recorded audio tapes, where respondents effectively interview

themselves, offer one answer to this difficulty and have been successfully used in distance education research (Lockwood, 1992 and 1996). Lockwood found that the quality of material gained through data collection using this method compared favourably with other methods, such as face-face-interviews. It also greatly reduced the cost of the research and alleviated researcher bias, which may occur through verbal and non-verbal cues to the respondent. The method allows the respondent to choose the most convenient time and place for making a response, leaves the questions open to interpretation by the respondent and reduces interviewer pressure resulting from the need to provide an immediate answer.

Questions for the tapes were based on the farmers' interview schedules used in the face to face interviews and were adjusted slightly for the different categories to ensure the questions were relevant. A semi-structured approach (Robson, 1993) was used where the questions were guides to responses. Instructions were given at the beginning of a written questionnaire and people were asked to talk as much as they liked, using the questions as a guide (see appendix 5). It was emphasised that the more they felt they could say the better. This did however, produce some lengthy tapes (2-3 hours long). The tapes were then fully transcribed.

Repetition was deliberately introduced into the questions. This was felt necessary to ensure that all the desired topics were picked up on, as, unlike the face to face interviews, it was not possible to return to a topic when it was felt that it had not been fully covered. This did, however, cause some respondents to pass comment on the fact that they felt they had already answered a question. In the initial tapes sent out it was found that at the beginning of the tape the answers tended to be shorter. The questions were therefore organised such that more general landscape questions were asked at the beginning of the tape, such as "How do landscapes make you feel?". This appeared to work very well, forcing the respondent to reflect on how they felt about landscapes and allowing them to relax into what they were doing.

A high response rate was achieved among the public category once people had been persuaded to record the tapes. However, as previously mentioned, a number of people wrote their answers instead of recording them, providing a variety of reasons, such as that their tape recorder had broken, indicating that they were not comfortable with the idea. Some respondents in both the public and expert categories requested that I interview them in person instead. However, questions concerning using the tapes were included in the questionnaires and although some

people did indicate that they felt self-conscious or awkward about doing the tapes, it was not generally felt to be an unpleasant task. For example, one person commented:

I felt a bit inhibited when first doing the tape, but not in the end. I enjoyed doing it.
[BPSI2:108-112]

The impression gained from listening to the tapes was that people frequently spoke from the heart and that they would probably have felt more awkward saying these things in my presence, especially when trying to express intimate feelings, for example, about how landscapes make them feel. They also indicated that my presence would have influenced their answers, which may have been the case in the face-to face interviews where people may have felt that they should provide some kind of 'right' answer:

I think it's a good idea doing the tape because you can stop and think what you want to say and you don't have to be embarrassed by your answers if you don't know, because nobody else can be present....I felt I didn't actually mind doing it.
[BPSI3:104-118]

Among the advantages of this method was the fact that the respondent could chose a convenient time to do the interview. As indicated by the way in which respondents turned the tapes on and off, they were able to take the time necessary to give a considered answer. People also gradually relaxed into using the tape. This was demonstrated by them turning the tape on and off less frequently as they moved through the questions, the words flowing more easily and even laughing on the tape. As found by Lockwood (1996), respondents frequently adopted a conspiratorial tone to their answers when dealing with a more sensitive or private point. Where the voice intonation may have been important, this was recorded when transcribing the tapes.

For one of the tapes I had asked a husband and wife to record together as it was felt that this may produce a richer response. However, this was not very successful and was not attempted again. The wife was constantly interrupted by her husband when answering the questions and the friction between them that this caused was obvious from the tape.

One further difficulty with this method is that it does not allow the researcher to expand on an answer to a particular point, or seek clarification. One respondent felt that this was also a problem for them commenting that:

Talking in person would possibly help draw out points you need to follow up because you are not sure what is meant. [BPROF1].

Also, some recordings were of poor quality and one was impossible to transcribe. Some people appeared to be inhibited about recording the tapes and frequent chasing was required in order to get the tapes returned. Such chasing can have a negative affect on tape return as well as being time consuming and uncomfortable for the researcher.

4.2.2.2.4 The discussion group

As mentioned earlier, a discussion group was held with a group of four people and myself in Norfolk . Although discussion groups may be distorted by dominant or atypical participants, the value of small group interviews for researching environmental issues has been demonstrated by Burgess, Limb and Harrison (1988a) and Burgess, Harrison and Filius (1995). The group consisted of one farmer, his wife and two local tree wardens. The tree wardens had been involved in a local hedgerow evaluation initiative. The discussion lasted for two and a half hours and was taped and transcribed in full. The discussion was based around extracts taken from the transcripts of the Buckinghamshire respondents. The extracts were chosen to represent the range of issues raised by the Buckinghamshire respondents.

Each person in the group was given a copy of the extracts. I then read them out aloud and asked the members of the group whether or not they agreed with what had been said. The conversation was allowed to run until everyone indicated that no more could be said on that particular issue. I then read out the next extract. Occasionally a prompt was given if the conversation wandered too far off the subject or one person appeared to dominate the conversation, but generally I adopted the policy of keeping out of the conversation.

Burgess, Limb and Harrison (1988a) suggest that once-only discussion groups may not be as successful as in-depth small groups, which are studied for several weeks or months. However, feeding the views of Buckinghamshire people to the Norfolk group proved to be a very successful way of instigating discussion and drawing out individuals own views, particularly with more controversial extracts. As the people in the group knew each other well, they were very comfortable with each other and quickly forgot that I was taping them, (as with most people I had taped, this had initially made them feel a bit self-conscious.)

4.2.2.3 Collecting data for the wider perspectives

For the wider perspectives both primary and secondary data were used. For all the categories perspectives media articles provided supporting evidence. For the public group a wider questionnaire survey was conducted and this is discussed in the following section. Informal data was also gathered from numerous discussions with people from all three categories. While not part of the formal data collection, these conversations formed a backdrop for the research and informed the wider perspective.

4.2.2.3.1 The wider public perspective: The questionnaire survey data

An Open Day held at The Open University in Milton Keynes was used as a means of collecting a larger number of views on hedgerows from people located throughout England. The day attracted many local people and Open University students from all over the country. A total of 70 English respondents were collected in this way. Table 5.1 shows the number of respondents by county.

A poster display using words and photographs on this research was used to attract people to the stand, (see figure 4.4). The display also included an A1 sized display board with 25 colour photographs of hedgerows in different locations, depicting different landscapes and hedgerow types which was used to give people a visual examples of different hedgerow types. The first page of the questionnaire (see appendix 6) involved six questions concerning where people lived now, where they had spent their childhood and descriptions of hedgerows in their local landscape. These questions were designed to find out to what extent they had been exposed to hedgerows on a daily basis throughout their lives. The second page asked questions concerning hedgerow structure and features of hedgerows that they liked, disliked or were in some way special. Question 7 gave seven examples of hedgerow types and asked that respondents circle the features that they liked to see. The questionnaire was designed to be as open as possible so that people did not feel restricted to providing answers that did not reflect their feelings. People were allowed to circle one or more feature that they liked. Respondents were not given too much space for their answers as the questionnaire was designed to be simple, and was deliberately made to fit on two sheets to prevent it from taking too long to fill out. Many verbal comments and discussions took place during the collection of the questionnaires and although it was not possible to collect verbal

comments as well as the questionnaires, general notes were made on the verbal comments made during the day and after the event.



Figure:4.4: Data collection for the questionnaire survey

4.2.2.3.2 The farmers' and experts' wider perspective

For the wider farmers' and experts' perspectives the published literature and the responses from the 1998 Hedgerow Regulations consultation document were used. Copies of newspaper and periodical articles, such as *Farmers Weekly*, were collected and photocopied over the duration of the research. Five visits to the library of the Department of the Environment (now the Department of Environment Transport and the Regions) were made during the period when the 495 responses to the consultation document were made available for viewing by the public. Within the thesis these documents are referenced as (CDR: 'date'). The Select Committee on Environment, Transport and Regional Affairs Minutes of Evidence (House of Commons, 1998a,b,c) was also used. A visit to an agricultural show provided background information for the farmers' perspective and participant observation (see Robson, 1993) of two hedgerow workshops provided additional information for the experts' perspective.

4.3 ANALYSING THE DATA

In section 4.1 I discussed the use of grounded theory for analysing data. This section looks at the way the data collected was analysed using computer software as an aid.

4.3.1 Computer aided qualitative analysis

Prior to the use of computers, 'cut and paste techniques' were widely used for managing data, for example, for collating all the passages of text and recorded notes or memos which had something in common (Kelle, 1995). These methods used index cards and file folders which could prove very time consuming to maintain if it was a large project. Also, such techniques 'cut' the text passage from its context which can render it meaningless unless some system for tracing back to the original passage is devised.

Although computerised software for handling textual data has been available since the 1960s, it was not until the early 1980s that it became more accepted for qualitative analysis and hence more widely used. Initially many qualitative researchers considered computer analysis of text to be inappropriate. With the move away from computers being viewed as merely expensive main frame number-crunchers to cheaper user-friendly personal computers, researchers came to appreciate that computers can be an aid to qualitative research, performing mechanical tasks and enabling the researcher to handle large amounts of material. As a consequence several qualitative researchers began to develop their own software (Previn, Kelle and Bird, 1995; Kelle, 1997) to suit the different research strategies used for analysing unstructured textual data.

Although the basic principles of such programmes are the same, a wide range of software packages are now available for computer aided qualitative data analysis which perform a range of different tasks and which will have methodological implications depending upon which package is chosen. Lonkila (1995) warns against the dominance of any particular software package as this may influence the research process with researchers adopting the methodology suggested by the software. However, Lee and Fielding (1995) suggest that in practice researchers appear to abandon the software they are using if it does not meet their needs, rather than attempt to fit in with it. It seems likely that an element of personal preference will also be involved in the choice of software. Although there has been much debate in the literature about the benefits or otherwise, the use of computers for qualitative analysis is now widespread among qualitative researchers (Kelle, 1997).

Grounded theory, particularly the coding process it advocates, has influenced the development of several software packages for qualitative data analysis. In

particular ATLAS/ti and NUD*IST were both designed using the Grounded theory model (Lonkila, 1995; Weitzman and Miles, 1995) although both programmes may be readily used for research using other strategies. It should, however, be noted that differences can exist in the terms used within software packages. For example, whereas coding in grounded theory means naming categories and discovering their conditions, consequences, interactions etc. in order to build a theory, coding within the computer software means simply attaching a name to a piece of text.

4.3.1.1 Advantages and disadvantages of computer aided analysis

For this project a code based theory building program, QSR NUD*IST version 4¹, was chosen (see Table 4.5). NUD*IST supports the process of theory building through text storage and coding, note making, building an index system and searching for patterns in the text or coding.

Like other qualitative computer programmes, NUD*IST allows for the mechanical handling of what would otherwise be an overwhelming amount of data gathered from different sources. However, computers are unable to understand the meaning of text and it is still the researcher who has to perform this analytical task. NUD*IST offers the most extensive and powerful set of code-based searching and retrieval functions currently available in commercial software, and this is the particular aspect that raises it above other similar programs. Weitzman and Miles (1995) state that “conceptually it is one of the best-thought-out programs around” possibly because it was written by a computer scientist and qualitative researcher working together.

The tree structure within NUD*IST allows hierarchical relationships to be identified within the theory building process. Hierarchical categories, whether data driven and hence built from the bottom up, or theory driven and built from the top down, are a powerful technique for organising and relating concepts (Richards and Richards, 1995). Dey (1995) goes as far as to suggest that the lack of computer technology may have been the reason why grounded theory has proved difficult to put into practice even by experienced researchers.

¹ QSR stands for Qualitative Solutions and Research, the name of the company that developed the software. NUD*IST stands for Non-numerical Unstructured Data Indexing Searching and Theorising.

Table 4.5: An overview of QSR NUD*IST Facilities. (Source: *QSR NUD*IST 4 User Guide*, 1997).

Management of different types of data documents:-

text - e.g. reports, interviews transcripts, evidence transcripts, historical or literary documents, personal records, field notes, newspaper clippings, abstracts.

non-textual records - e.g. musical scores, photographs, drawings, tape recordings, maps, plans.

Creation, Management and Exploration of Ideas and Categories

Document exploration, creating categories and coding text.

Data may be coded in an index system at free nodes (floating categories) or structured nodes (tree structures with parent/daughter/granddaughter nodes/categories).

Graphical representation of coding in tree structures.

Managing and exploring the ideas through recoding.

Writing and editing memos (notes recorded during data analysis) on documents and coding.

Creating reports and editing reports on documents and coding.

Performing large repetitive tasks through the use of command files.

Importing and exporting data to external packages, such as spreadsheets, statistical programs etc.

Ask questions and build and test theories

Powerful search and retrieval functions which allow for a large variety of retrievals for searching for patterns in coding and new coding generation.

Calculates coding frequencies.

Discovery of themes and storage of memos (notes) about the data.

Generating reports on the text, coding patterns and statistical summaries.

However, care needs to be taken not to ignore the context of the coding carried out. Although NUD*IST allows for rapid selection of the original context and easy identification of links with other text segments, as indicated by Weitzman and Miles, it does tend to distance the researcher from the original data, as once coded, the text is constantly being retrieved out of context. Care also needs to be taken to ensure that coding is applied in the appropriate way according to the research methodology. As noted by Seidal and Kelle (1995) it is easy to confuse referential coding, where codes refer to chunks of categorised text, with factual coding, where codes refer to factual information about a topic. Such confusion can result in the loss of information contained in the original document or losing the context of a piece of information.

Little documented research exists on the practice of using computers for qualitative research. A small scale study by Lee and Fielding (1995) based on focus groups, found that the mechanics of inputting the coding could be time consuming and demoralising. They also found that researchers were inclined to give up where software design based on a particular methodology was felt to be unsuitable for their purposes.

As a researcher new to qualitative research I found that using computer software based on the grounded theory approach was an invaluable aide to learning how to carry out such analysis in practice. It proved particularly useful for continually making comparisons as indicated by Lonkila (1995), who also suggests that it allows researchers to be more systematic in their concept development.

The use of computer analysis can also enhance the validity of the research by enabling the use of a larger sample size, helping to counteract some of the criticism of qualitative research which, out of necessity has tended to use small size samples. As commented on by Kelle and Laurie (1995), it may also enable the data to be more fully explored than it would be possible to do manually, increasing the trustworthiness of the findings. However, because of the ability of the computer to handle such large amounts of data, it is very easy to over-estimate the amount of data that can be analysed by a single researcher. Furthermore, computer aided analysis requires lengthy periods of on-screen reading of text which may not suit everyone.

4.3.2 Analysis within this research using QSR NUD*IST

Tape transcripts from face to face interviews, self-recorded tapes and a discussion group, extracts from Hansard on the Hedgerow Regulations, and field notes were entered as on-line documents into NUD*IST. References to books and other 'off-line' texts or information were also entered as off-line documents. Each document was read and coded in a first round of coding, which gathered together text segments under different topics, see appendix 9. The aim was to build up a network of codes and identify core categories which represent an emerging theory. One of the advantages of using NUD*IST was that it automatically provided a framework for the coding process. Notes were recorded during the analysis as 'memos' which were created at the relevant nodes to keep a record of thoughts and ideas during the analysis. Definitions were allocated to the codes as categories were developed. NUD*IST allows for continual changing and rearranging of codes

which was carried out constantly during the process until a stable set of appropriate coding was achieved. At this stage all nodes were left free floating, i.e. not within any kind of tree structure, which graphically represents different levels of coding. (Within NUD*IST the emerging theory can be graphically displayed in tree form).

A second round of coding was carried out. At this stage the initial coding was transformed into the conceptual categories and their sub-categories as ideas about the data were explored. NUD*IST's sophisticated search and retrieve facilities were then used to explore the data, for example, to look for the co-occurrence of codes in a document to explore possible theoretical relationships between categories.

From the coding process a series of very detailed memos was produced covering the main themes. The memos also set out key quotes from the data which provided the supporting evidence. The analyses chapters of the thesis were then written from these memos.

Reliability

Attempts were made to construct the coding so that it was as unambiguous as possible. In this research codes have a referential function in that they refer to chunks of data, i.e. text, rather than being representations of a phenomenon. Kelle and Laurie (1995) have noted that introducing a stable and consistent coding scheme too early in the research process can be detrimental to the generation of ideas. Therefore, specific definitions were assigned to the codes and the coding scheme refined, to ensure the codes were used in a consistent manner, once the coding had developed and became more robust. Following the first round of coding, a sample document was chosen and coded by three other researchers to check that nothing was being overlooked in the coding process. Although the names given to the categories varied with each researcher, generally the same conceptual categories were identified. However, it should be noted that someone with different interests may code the same text in a different way. This does not necessarily mean that the process is therefore invalid as it is possible to produce an equally valid alternative set of explanations for a given text, (Hammersley and Atkinson, 1995; Kelle and Laurie, 1995; Seidel and Kelle, 1995).

It was originally intended that the findings from the research on the categories' perspectives would be fed back to the respondents. My experience from the discussion group suggested that this would be useful. However, the time available did not permit this.

4.4 REFLECTIONS ON CHAPTER 4

“It is frequently well into the process of enquiry that one discovers what the research is really about” (Hammersley and Atkinson, 1995)

Qualitative research has frequently been criticised for not being ‘rigorous’ and qualitative researchers have been criticised for not presenting details of the research process (Baxter and Eyles, 1997; Bailey, White and Pain, 1999) Within this chapter I felt that it was important to attempt to set out in some detail the development of the research strategy and the research process itself to counter such criticisms.

While I sought an approach to the research that would fit in with a systems framework, I was also influenced by the work of Burgess (1982) and Burgess, Limb and Harrison (1988a and b). The methods used were about listening to people and valuing their stories. For me one of the key aspects of doing research this way is that ideas are firmly grounded in the ‘real world’ and come from the people themselves. I should like, however, to emphasise once again that I bring to the research my own view of the world and that the analysis and what follows represents my interpretation of the data. Someone from a different background, for example, in social science, may well see things in the data which I do not see. This is one of the disadvantages of being a single researcher. Ideally researching in this way would involve several researchers working on a project together. Different people’s perspectives on the data may then result in a richer interpretation of the data.

It is also not possible within a small research project, such as this, to spend time interviewing very large numbers of people. In-depth interviews and their transcripts are very time consuming to analyse and there is a limit to what one person is able to achieve within the available time. Given more time there were many avenues along which the data collection for this research could have proceeded.

The following six chapters examine the results of the analysis of the data collected. In the next three chapters I set out the public’s, farmers’ and expert’s relationships with hedgerows. Each chapter represents a slice through that category’s perspective, presenting firstly the category’s wider view followed by the in-depth view. Chapter 8 then draws these perspectives together. Although the following chapters are presented in this way it should be noted that this is not necessarily the order in which the data were collected and analysed.

CHAPTER 5

THE PUBLICS' PERSPECTIVE

This chapter sets out the range of relationships that members of the general public have with hedgerows in the landscape and other groups. As noted in chapter 3, when considering the importance of hedgerows, this category's views have been particularly neglected, yet they are the largest category who may be considered to have a stake in hedgerows.

Although it is a rather artificial grouping, in that everyone is in a sense a member of the public and there are likely to be large variations within the category in terms of what people do and their interests, for the purposes of this study the public respondents are considered as one group. The evidence is presented as far as possible in peoples own words, i.e. the people involved in this research are allowed to speak for themselves. Even so, drawing out general themes means that it is impossible to really capture the depth and richness of the responses and each time I return to the data I find something new. When asked about hedgerows people would often say "well I just like them". This chapter sets out what lies behind the word 'like'. People gave very personal, emotional responses. They frequently became very enthusiastic when discussing what they liked, indicating how deeply their feelings went.

Section 5.1 begins by examining the data from the perspective gained from a wider public questionnaire survey. Section 5.2 takes an in-depth perspective drawing on the evidence from initial contact with respondents and the self-recorded tape data. These perspectives represent partial views of the publics' relationship with hedgerows. The headings within the sections represent the main categories or themes that emerged from the data. Finally, section 5.3 considers the boundary to the public's system of interest.

5.1 THE PUBLICS' RELATIONSHIP WITH HEDGEROWS

5.1.2 The wider perspective: A questionnaire survey

A wider perspective on the structure and features of hedgerows that people particularly liked was obtained from a questionnaire survey (see appendix 6). As previously mentioned, the questionnaire covered responses from 70 English residents. Of the 70 respondents 63 were currently living in the planned countryside, where hedgerows are more recent and fields tend to be larger, and 7 lived in the 'ancient' countryside, which is generally more hedged with older, smaller, irregular fields. No indications were found of perceptions being different according to the type of hedged landscape, however, this may have been revealed had the sample from the unplanned countryside been larger. Of those living in the planned countryside 5 respondents were currently resident in the Cambridgeshire area and 21 in the Buckinghamshire area see (table 5.1), the locations for the in-depth survey.

Table 5.1: Number of respondents to the questionnaire survey by county.

| County | Number of Respondents |
|--------------------------|-----------------------|
| Buckinghamshire | 21 |
| Cambridgeshire | 5 |
| Northamptonshire | 5 |
| Bedfordshire | 6 |
| Surrey | 2 |
| Berkshire | 1 |
| Middlesex | 2 |
| West Midlands | 1 |
| Hereford | 2 |
| Hertfordshire | 4 |
| Somerset | 1 |
| Sussex | 2 |
| Suffolk | 1 |
| Berkshire | 2 |
| Essex | 4 |
| Hants | 1 |
| London | 3 |
| Oxfordshire | 3 |
| Lancashire | 1 |
| Suffolk | 1 |
| Warwickshire | 2 |
| Total UK | 70 |
| British Columbia, Canada | 3 |

The data from the questionnaire survey was of a different nature to that of the in-depth view, as it was intended to provide a wider perspective rather than a direct

comparison, thus comparisons could not readily be drawn between the different data sets.

The number and willingness of people participating in the questionnaire and verbal comments made when completing the questionnaire or viewing the associated display, indicated a high level of interest in the research topic and some even commented on how important they felt such research was. The way in which the questions were answered, frequently over-filling the space provided on the questionnaire, demonstrated the high degree of interest that some people had in hedgerows. There were also many verbal comments about hedgerows they liked to see or ones they knew of. Concern was also expressed over the loss of hedgerows from their local landscape. While some people expressed strong feelings, others appeared not to have thought much about hedgerows or issues concerning them before participating in the survey.

The questionnaire was designed to give an indication of the type of hedgerows that people liked and what features they particularly liked to see. Respondents were also asked whether they had a hedge that was particularly special to them in some way. All respondents answered question 7 regarding hedge structure, which used photographs to assist people in answering what type of hedgerow they liked to see and only one did not answer any of the supplementary questions, numbers 8-11. Of the 70 UK respondents 66 (94%) said there were features of hedgerows that they particularly liked; 35 (50%) mentioned features that they did not like and 21 (30%) had a hedgerow that was special to them in some way.

The following sections set out the main categories drawn from the questionnaire data. All the questionnaires obtained were given a number e.g. [R2], the numbers in brackets in the following section therefore identify a particular respondent.

5.1.2.1 Hedgerows as structural features

People commented on hedgerow structure at both the landscape and individual hedge scale. Hedged landscapes with a diversity of structure, in particular those with tall and bushy hedgerows and hedgerows with trees were the main features that people liked most to see. Table 5.2 shows the main hedge features that people said they liked to see.

Table 5.2: The type of hedgerows people liked to see (from the questionnaire survey data)

| <i>Type of hedgerow</i> | <i>Number of respondents stating a preference</i> | <i>Percentage of respondents stating a preference</i> |
|-----------------------------|---|---|
| Tall | 12 | 17% |
| Tall and bushy | 38 | 54% |
| With trees | 48 | 69% |
| Diversity of shape and size | 44 | 63% |
| Large but neatly trimmed | 21 | 30% |
| Small and neatly trimmed | 11 | 16 % |
| Hedgerows with gaps | 10 | 14% |

People were deliberately not restricted to providing one preference of hedge type that they liked to see and most people circled more than one type of hedgerow. Only sixteen (23%) of respondents chose only one feature with thirty-four (49%) choosing three or more. Several people commented that they felt that all hedgerows were important and two respondents circled all seven examples. People therefore indicated an overall preference for a diversity of hedgerow structures. This also indicates that to have constrained people to one answer or preference is likely to have resulted in a false impression of the type of hedgerows that people liked.

The following question, number 8, asked people if they had a particular preference for the type of hedgerow they liked to see. Of the twenty-five people stating a preference, nineteen preferred a diversity of size and shape of hedgerows. Four people also added that they liked to be able to see over hedgerows and two respondents stated that they particularly liked natural shapes. Thus a liking for diversity was also the main response to question 8. However, some people appeared to think in terms of variety rather than diversity. Although in answer to question 9 diversity of hedgerows was the most frequently mentioned aspect that people like to see, nine respondents used the term 'variety' rather than diversity.

Although 51% (36) of respondents liked to see tall and bushy hedgerows and several people referred to an appreciation of natural shapes or hedgerows that look natural [for example, R18,19, 56] and 44% (31) of respondents liked tidy hedgerows, 49% (34) of respondents stated that there were features of hedgerows that they did not like to see. People commenting on the display board particularly noticed the photograph of a hedge being mechanically trimmed, which was something they did not like to see. This was also apparent in the responses to the question concerning dislikes, as a dislike of mechanical trimming was the most common feature that respondents mentioned. Four people did not like hedgerows that were too tall and obscured views and two were concerned about a hedgerow's effect on personal safety while out walking.

Although the age of a hedgerow may affect its structure and the wildlife present, only two respondents considered age as a characteristic of a hedgerow that they particularly liked, indicating that this was not something that people usually considered.

5.1.2.2 Hedgerows as scenic landscape features

That people liked to see diversity in hedgerows was evident in answers to the questions. However, for most people, diversity appeared to mean not just diversity of structure but also plants, animals, colours and smells. 'Green' or 'greenery' was particularly mentioned as a valued feature in the data indicating that, at least for some people, hedgerows contributed to the landscape by providing colour.

Thirteen questionnaire respondents referred specifically to a hedgerow's contribution to the scenic or visual landscape. For this latter group of respondents hedgerows were viewed as contributing to the visual landscape by making it more varied and less monotonous, breaking it up and adding structure:

They look natural and bring interest to the countryside and are pleasing to the eye.
[R56]

Their contribution involved not only the visual but also the ephemeral, for example:

They smell nice and summery. [R66]

Yes (to liking a special hedge), I like to see changes through the seasons while out walking. [R52]

For this last respondent and several others, hedgerows also had significance as providers of signs of changing seasons [for example, R9,R58].

5.1.2.3 Hedgerows as homes for wildlife

People tended to mention wildlife in general rather than singling out particular species with twenty six (37%) people mentioning liking the hedgerow wildlife. Twelve mentioned their value as a habitat, although this was frequently referred to as 'homes' for wildlife. Thirteen mentioned birds, twenty-one mentioned flowers and or flowering plants and twelve mentioned animals. Only three people mentioned insects.

Although people liked to see a variety of hedgerows and their associated species, none of the seventy questionnaire respondents mentioned the word 'biodiversity'.

5.1.2.4 Hedgerows as part of our towns and gardens

Of the twenty-one respondents who said they had a hedge which was special to them in some way, the majority described a hedgerow that was part of their local landscape or part of their garden. For example, R4,15, 22, 23 and 27 felt their garden hedgerows were particularly special to them. Those who did not describe a local hedge or hedgerow described those of places they liked to visit, for example, while on holiday in Devon, Cornwall or the Scilly Isles.

5.1.2.5 Hedgerows as part of childhood memories

People also possessed a nostalgic view of how the countryside used to be when they were a child, remembering a landscape with smaller fields and traditionally managed hedgerows. Four respondents mentioned memories of hedgerows from their childhood. One in particular, when answering whether they had a hedgerow which was special to them in some way, commented that:

Local hedges make up most of my childhood memory connections. [R2].

Respondents also frequently gave vivid and affectionate descriptions of hedgerows from their childhood when describing the area where they grew up. They frequently mentioned the small fields and more hedged landscape they remembered:

Heaven. The scale of fields in my childhood was just the right size not to feel overwhelmed. Wonderful places to find wild flowers and birds nests [R20].

There appeared to be a general perception among respondents that the landscape had changed for the worse, with hedgerows appearing more "wild" and "rambling"

in their memories. Although this may be a nostalgic view of the past it is also a comment on the way many hedgerows have been lost from the English landscape.

5.1.2.6 Questionnaire survey limitations

The questionnaire data provides confirmation that although individual views may differ on certain aspects of hedgerows, members of the public provided similar responses regardless of where they lived. Thus for the purposes of this study the public may be considered as a single group. However, the limitations of this type of survey are apparent as the data lack insight into the respondents answers. For example, of the people who mentioned that they liked to see gaps in hedgerows it would have been useful to have known why they liked gaps. It is possible to speculate that this may be because it opens up vistas on the landscape. However, this is not evident in data which lacks the richness of in-depth interviews. Despite this, the wider survey provides useful supporting evidence to the in-depth perspective.

5.1.3 An in-depth perspective

The in-depth perspective, while mainly taken from the audio tape recorded interview data, is also backed up by a few perspectives gathered from the 1998 Hedgerow Regulations consultation document responses and numerous informal conversations with people about hedgerows. Very few members of the public had provided a response to the consultation document. The document was only sent to those people the Department of the Environment (subsequently the Department of Environment Transport and the Regions) considered to be 'interested parties' such as the main bodies and organisations involved in wildlife issues, farming, and environmental planning, i.e. those who may be considered as belonging to the expert category. Most of the data for the publics' in-depth perspective was held within NUD*IST and references are given in brackets to the original transcripts (on-line documents)¹. A list of NUD*IST categories or nodes generated by the analysis are provided for reference in Appendix 9.

No appreciable differences were apparent between the Cambridgeshire and Buckinghamshire public groups, enabling them to be combined for this in-depth

¹ For example [NR: 18 12] – NR stands for Nudist Reference, 18 12 is the location at which a category is held in NUD*IST. Or [BPSI5: 54-57] – BPSI refers to the respondent, 54-57 to the text units in their transcript.

perspective. However, the Cambridgeshire data was not as rich as that obtained from the Buckinghamshire area (see chapter 4, section 4.2.2).

Members of the public category often found it difficult to articulate what it was they felt influenced their relationship with hedgerows. It was often perceived as an innate feeling, a 'natural' concern or part of a more general concern for the well being of the environment, and for some people it was the first time they had thought about hedgerows (for example, BPSI3).

5.1.3.1 Images of hedgerows

As a starting point in the in-depth investigation of peoples' relationship with hedgerows, during the initial phases of the project, ten people were asked to simply write down the first words that came to mind when they thought of the term hedge and hedgerow, see Table 5.3. The objective was to find out what kind of mental images people associated with the word hedge or hedgerow.

The very first word that came to respondents' minds are indicated in bold. Most people [7/10] mentioned farming aspects or farms. Nearly all the features respondents mentioned were positive, except for two respondents who mentioned hedge loss and one who mentioned hedge laying dying out. All except two mentioned wildlife with six people specifically mentioning birds.

Only three specifically mentioned landscape or countryside. However, the words conjured up a rich diversity of images reflecting the countryside and observing hedgerows as an integral part of the landscape. People also appeared to view hedgerows at a local level. The features that are most frequently mentioned are those which would be found at the scale of an individual hedge or hedgerow, for example, those that they would observe while out walking, such as birds, flowers, berries. These images of hedgerows appear to be threaded into general images of the countryside. The mental images conjured up did not appear to divorce hedgerows from the rest of their environment but view them in their context and as inseparable from images of the countryside generally. People did not just think of hedgerows, fields or landscape with nothing associated with it. They also included the less tangible or ephemeral, for example, fresh air and sunshine. Human made objects, such as farm machinery or telegraph poles and human activities such as ploughing, were also an integral part of these images.

Table 5.3: Thoughts on Hedgerows

| Respondent Number. | (Words that came first to mind) |
|---------------------------|--|
| 1 | Farmers , loss of hedgerows, protection, landscape, plants, trees, lanes, fields, shrubs, crab apples, birds. |
| 2 | Row , shelter, boundary, barrier, blind spot, picturesque, garden hedges, shears, hedge your bets. |
| 3 | Fields , birds, meadows, mature, cows, fresh air, borders demarcating territory (farmers), squirrels, quaint, flowers. |
| 4 | Sparrow , Hawthorn, trim. Berries, roses, avoid, row, landscape, birds, animals, bank, grasses, green, fields, lanes, horizon, protect, grubbing out, dry stone, walls, rabbits, guns, cover, habitats, reserves, boundaries, blackthorn, farms, farm machinery, eye catching, wind, reseeded, nature. |
| 5 | Hedge End Farm (Holiday), Gateway to farm, countryside of nice landscapes, (i.e. where I came from), cider at haymaking time, tractors, hay banks, country house, local pub, sea of corn, (people), birds nests, roadway, pathway, boundary, way to church, way to pub, wood for arrows, snakes, disappearing, hedge laying dying out. |
| 6 | Green , box, private, yew, wild flowers, foxgloves, hedgehogs, primrose, blackberry bushes. |
| 7 | Ditch , wild flowers, brambles, trees, berries, blossom, insects, grass, boundary. |
| 8 | Field , flowers, farmers, tractors, birds, cornfield, tracks, ploughing, scarecrow. |
| 9. | Sparrow , ditch, tractors, fields, lanes, rabbits, field mice, voles, foxes, badgers, sparrow hawks, kestrels, buzzards, telegraph poles, grass, nettles. |
| 10 | Green , fence, countryside, fields, cows, lanes, ploughing tractor, sunshine. |

Following this study and the preliminary study mentioned in chapter 3, interview data was collected mainly through the use of self-recorded tapes (see table 4.4). The following sections discuss the main themes or categories generated from the data in the grounded theory process (see chapter, section 4.1.3).

5.1.3.2 Hedgerows as landscape features

Hedgerows form an important component of the landscape and the initial research indicated that people did not divorce them from their landscape context. I therefore felt it important to consider peoples response to the landscape as a whole.

Although people found it particularly difficult to articulate what landscapes meant to them or how they made them feel, everyone attempted a description. Self recorded tapes had an advantage over face to face interviews for these type of questions as people were not under any pressure to provide immediate answers and had time to consider their response. However, those with less experience of the countryside, tended to find it more difficult to express their feelings about the countryside and hedgerows. Consequently, their answers tended to be shorter.

People described landscapes as “inspiring”, and providing a “sense of well being” and “freedom”. They often tended to be associated with happy memories of sunny days.

Landscapes and the countryside provided a retreat from busy lifestyles, whether urban or rural. They were described as making them feel “more relaxed” “calming” and “peaceful”:

Q. How do landscapes make you feel?

A. I think they give you a sense of freedom and coming alive, just to feel relaxed and look out on something so peaceful. [BPSI3: 17-19]

One of the important features I feel is that, although I can hear distant traffic and occasionally voices carry to where I am, visually it is very peaceful. [BPSI10 in field 297-299]¹

Generally all respondents viewed landscape as the rural countryside, although a few did recognise that there may be alternative descriptions. Visual signs of human activity in the landscape, were often viewed positively, adding to the ‘rural’ scene.

Landscape did not mean just the special places, it meant the everyday views they had from their house or farm, when travelling or walking along a path in the countryside.

Q: What does the term ‘landscape’ mean to you?

A: The view I see from a car, or travelling on a train, or looking from the top window of a house. [BPSI2:15-17]

For the public, one of their main views of the countryside was from the road. The different views provided by different landscapes while travelling round were very much appreciated:

¹ The initial letter identifies whether it is a Cambridgeshire (C) or a Buckinghamshire (B) respondent.

One thing I particularly like to see, but don't see very often, is where the trees either side of a country lane meet in the middle to form an archway. There are very few areas in the countryside where you see this and I think it is one of the most attractive parts of the countryside you will ever see. Equally, a river valley with a clear view from the road, looking down over the hillsides, is another sight I like to see. [BPSI10: 136-140]

Views were considered an important feature of the countryside and some people disliked hedgerows that were too tall and obstructed these views. People liked to see out to the horizon and several people said they had a preference for seascapes for this reason. Nevertheless, they did not like to see a featureless landscape. People were also aware that they probably held an idyllic view of the countryside:

Landscape to me means fields, hills, trees and hedges, a generally peaceful unspoiled country scene, in an ideal world I know. [BPSI7: 23-26]

Landscape variety was also considered to be important. The public category appeared to appreciate viewing landscapes that were different from those they normally experienced. They particularly liked to see "natural" areas when travelling. Water was also a common feature mentioned:

When travelling elsewhere in the countryside I like to see - I suppose my answer to that would be water in a way, but partly that's because East Anglia is so dry. I really like to see streams and rivers, partly because its just nice to see water anyway, but also again because it's a different kind of landscape that they introduce with different habitats for different kinds of birds and animals and different plants in boggy areas and green river banks and that kind of thing. [CP1: 162-167]

Although many people viewed the East Anglian landscape as "barren" or "boring", the large skies and open views and horizons it provided were also appreciated.

N: I like to see variety and some character. I suppose, yes, it's quite different when you go to different places and you can sort of see differences in them rather than everything being the same, so you get your little Devon sort of rolling countryside with little fields in, then you go to East Anglia and get lots of big flat sky,

C: Yes, its nice to see things on the horizon when you're looking in the distance.

N: Agrees [BPSI9: joint interview, 122-126]

Hedgerows as lost landscape features

People tended to think of hedgerows as something natural or part of the natural balance of the countryside and some did not appear to be aware that hedgerows

were largely a product of human intervention in the landscape. Others appeared to view them as natural in the sense of areas allowed to be wild in a human-made space. Although concern was expressed over the urbanisation of the countryside, people in all categories appreciated the need to allow the countryside to change. No-one held the view that it should be preserved rather than conserved. However, strong feelings were expressed over the loss of hedgerows:

Bearing in mind that there is no true wilderness left in England and that it is a man made landscape or a man engineered or manipulated landscape and that the landscape does continually change and that's alright by me. But what I don't like is a lack of balance. And if I see more evidence of human habitation than I feel is right and less evidence of other species habitation including plants, then I think that's a great spiritual sadness for us all. So that's what I don't like to see. [BPSI5:162-172]

People were aware of how the policies for the countryside had changed and several people mentioned how the Government had once encouraged farmers to take hedgerows out to 'improve' their farms. Past landscapes were frequently viewed with nostalgia, with people commenting on the destruction of the beauty of the landscape and disrupting the richness of pattern and variety in the landscape. Thus hedgeless landscapes were frequently described as barren, uninteresting, naked, drab, dreary or boring. They remembered a landscape that was far more hedged than it is today.

I was devastated when some were bulldozed out. [CP10: 73-6]

Many people, particularly in Cambridgeshire, had memories of hedgerows being bulldozed out or trees being dynamited.

Some respondents expressed concern because they felt that hedgerows were irreplaceable, particularly older hedgerows. They also mourned the loss of wildlife and empathised with the creatures who were made 'homeless':

Once a hedgerow has been taken out then all those birds and animals and insects presumably die off, which I think is very sad. [CP1: 97-120]

However, several people, particularly in the Cambridgeshire area, felt that the landscape could, or had actually, benefited from hedgerow removal, particularly on the flood plains and high ground. They felt that removal created a more historically accurate landscape.

5.1.3.3 Hedgerows as part of our heritage

Hedgerows were felt to represent the Englishness of the landscape and this landscape formed part of their cultural identity [NR:18 15 1 3]. They provided a sense of place at the national, regional and the local scale and people demonstrated a strong sense of pride in the English hedged landscape:

One of the main views of a landscape are the hedges and hedgerows. Hedgerows are important because they are part of our heritage.

[BPSI2:32-33]

.....and they are very much part of our history. [BPSI5: 61]

For the public, hedgerows were generally all perceived as being old and therefore being a part of our history, for example, one person felt that “some are the oldest features of the land” [CP8:69] and another that “they mark field boundaries that were established a long time ago.”[CP9: 73]

5.1.3.4 Connections with the past

People viewed hedgerows as a link with the past which gave them a sense of continuity through time [NR:18 15 1]. Hedgerows appeared to have a timeless quality about them for many people:

I suppose what I feel about standing here is that this is a wildlife that could be unaffected for years and years and years without anyone actually touching it at all. It won't develop it will just remain homes for creatures for many, many years.

[BPSI10 (in field) 278-281]

Hedgerows can also be made out of wild roses, and some date back to way gone times and still smell as pretty now as what they ever did. [BPSI12:75]

People felt they provided a direct link with their ancestors:

Q. In what way do you think hedgerows contribute to the landscape?

A: Well it varies according to the landscape but they are a direct link with our history. I guess they give a sense of history or humanity as part of the landscape itself. [BPSI5: 26-29]

5.1.3.5 Hedgerows as part of the landscape's character

For the public category hedgerows were felt to be an intrinsic part of the landscape, although they were not necessarily felt to be more important than other landscape

features and one person felt hills and trees were more important landscape features. Table 5.4 gives a list of some of the comments from the self recorded tape interview data on the way hedgerows were felt to contributed to the landscape.

Table 5.4 : Ways in which people say they feel hedgerows contribute to the landscape

| |
|--|
| <p>Add variation and interest, especially to plain flat and featureless landscapes</p> <p>Provide structure and diversity.</p> <p>Add visual continuity.</p> <p>Give shape and enhance views.</p> <p>Provide links between features.</p> <p>Give perspective to the landscape.</p> <p>Provide feelings of intimacy.</p> <p>Provide feelings of seclusion.</p> <p>Provide colour, definition and pattern.</p> <p>Irregular patterns give an area familiarity.</p> <p>Add height and perspective, especially in a flat landscape.</p> <p>Offer refuge and food for wildlife.</p> <p>A sign of a 'healthy' landscape.</p> <p>Soften landscapes.</p> <p>Provide a sense of the unexpected.</p> <p>Provide a boundary to vision and expectation</p> <p>Represent Englishness.</p> <p>Are markers in the landscape.</p> <p>Provide links with the past.</p> <p>Enhance and add beauty to the landscape.</p> <p>Provide 'roads' of wilderness.</p> <p>Are part of our heritage.</p> |
|--|

However, most respondents felt that hedgerows were an essential part of the character of the English landscape. People were found to be particularly sensitive to local landscape character. Hedgerows were felt to be a 'natural' part of the lowland landscape and would be out of place in an upland environment:

Q: When considering a view of the landscape, how important do you feel the hedgerows, as opposed to other landscape features, are?

A: I think that's a really difficult question because hedgerows are so intrinsically part of the landscape and certainly I've looked out over landscapes where there are no hedgerows but there are stone walls and I don't miss the hedgerows because

the stone walls are more appropriate to that particular landscape, or they feel more appropriate, and I'm more used to them. And I've also spent a lot of time on open moorland where there aren't any hedgerows and of course it would be very inappropriate to have a hedge there, you don't need them. [BPSI5: 120-134]

One person mentioned how the hedged English landscape gave the appearance of a degree of naturalness and it represented a more 'humanscale' landscape, particularly when compared with other countries' landscapes.

I've seen landscapes in the United States which are truly on a grand scale and as a human they make you feel very small somehow and that you are like a little ant almost because of the grandeur that you have spread out before you. There's nothing much like that in England really, because the country is so densely populated and in this country the landscape is so heavily marked by man that it has a much more human scale to it somehow. I think if the landscape's green and lush with some variety then it does make you feel good to be in it. And a landscape which is totally farmed from beginning to end for as far as the eye can see does make you feel as if there is something lacking somehow, so I think they do have an effect on your feeling in a way, although its hard to describe exactly. [CP1:33-43]

Their perceived contribution to the regional landscape, however, varied.

Buckinghamshire respondents appreciated them as one of the main contributing features of the landscape, while in, the Cambridgeshire and Norfolk areas they were felt to contribute less to landscape character.

5.1.3.6 Hedgerows for providing landscape structure

Hedgerows were valued for the way they break up the countryside, give it diversity, perspective and pattern. Hedgerows role in providing structure in the landscape was recognised by most respondents and was felt particularly important for the Cambridgeshire respondents:

I think they contribute an enormous amount actually. They offer some structure to the landscape, for example, if its flat like it is round here then a hedgerow brings some height and perspective into the picture....[CP1: 45-46]

People also preferred hedgerows that were irregular rather than straight. Such hedgerows were viewed as more interesting landscape features:

I don't like to see dead straight hedges or clipped hedges, I like to see hedges with mature standards, with scalloped grass below the hedge, particularly with a wide range of plants in the hedge. [BPSI10:112-114].

Hedgerows as the patchwork of the countryside

There was a general appreciation of the 'patchwork' effect that hedgerows give to the English landscape.

The metaphor "patchwork" was used when referring to hedged landscapes throughout the data collected for this study. All categories felt that pattern in the landscape was important and that hedgerows were an essential component:

Hedgerows create patterns in the landscape usually like a patchwork quilt.

[BPSI4: 21]

For most people, smaller field sizes increased the visual landscape value. For the public, images of small fields also related to less intensive and hence more environmentally friendly farming. Some people believed that the "patchwork" of our hedged landscape was also something visitors to this country liked and expected to find and in this sense held importance as a tourist attraction.

5.1.3.7 Hedgerows as providing intimacy and protection

Hedgerows were important for providing a sense of mystery, intimacy and privacy, particularly large bushy hedgerows. Feelings of vulnerability and exposure were also described by the Kent Federation of Amenity Societies response to the consultation document:

"The landscape of hedgerows is one of small scale, yet with infinite variety. The landscape of no hedgerows is one of prairie-like bleakness; a monoculture desert which slightly intimidates the observer by inspiring feelings of vulnerability resulting from exposure". (Kent Federation of Amenity Societies 9.11.97 CDR)

There was evidence that for some people the way a hedged landscape made them feel was a link with something deeper within them. The respondent who took a tape into a field to record his thoughts and feelings, for example, expressed feelings of exposure that places without a hedgerow possessed:

Just a PS, walking out of the field and back up the bridle path where there's no hedge, what struck was that being at one with a hedge or hedgerow is possible a primeval instinct to survivability in that walking across a field gives you greater exposure if you are prey but if you are walking along a hedge you are perhaps able to hide yourself. It's maybe that our liking for hedgerows is maybe something that's a bit older than we realise. [Tape recorded in field -BPSI10 327-331]

Evidence of these feelings was also present in the questionnaire data. To the question “Is there anything you particularly like about hedges/hedgerows?”, one person replied “It gives me the feeling of boundaries.” [Q1].

5.1.3.8 Hedgerows as functional

“Hedgerows on rural lanes provide cyclists with both a natural form of shelter from wind and rain and a natural traffic calming method for vehicular traffic....they are also highly valued by cyclists for their wildlife value and especially in more remote areas, as vital landmarks being marked on O.S 1:25,000 maps (Cyclists Touring Group, CDR, 5.12.96)

For the public, function was essentially viewed in relation to themselves rather than to the farmers. As the above quote demonstrates, hedgerows provided the public with at least one functional role. Although wildlife, visual, aesthetic and ephemeral aspects were frequently felt to be more important, their importance for shelter from the wind along roads and footpaths was particularly commented on by people who walked or cycled [NR:18 15 2 2]. One person expressed concern that over the last 20 years their village had lost most of its hedges and that, as a result, snow drifts blocked the lanes and one street flooded regularly affecting peoples homes, (Mr Reynolds, Collier Street Residents Association, Kent, CDR: 26.11.96).

Hedgerows also provided an educational function. They are often a subject of school studies, talks or educational walks in the countryside. More knowledge of other aspects of hedgerow such as their history or ecology, appeared to enhance peoples appreciation of them. As one person who had just been on the hedgerow field visit stated:

Interesting actually, its like a piece of living history across the landscape which if you know more about and understand a bit more about you can get so much more pleasure from. [CP1: 218-220]

The public respondents appeared to gain enormous pleasure from picking wild food. Blackberry picking, in particular, was mentioned and featured in many peoples childhood memories of hedgerows [NR:18 12]. People reported collecting blackberries for pies and jam, sloes from the blackthorn for making sloe gin, elder flowers for drinks and hazel nuts. Collecting from the wild is something humans have done since their existence, yet today there are very few places where people are able to collect from the wild.

5.1.3.9 Hedgerow as ‘homes’ for wildlife

As found in the questionnaire survey data, the public respondents considered hedgerow wildlife to be very important, This was evident from the descriptions of hedgerows and when answering questions about their likes and dislikes. Table 5.5 lists some of the likes and dislikes that people mentioned in the self recorded tape data.

Table 5.5 :Some of the things people said they like and dislike about hedgerows (from the tape data)

| Likes | Dislikes |
|---|--|
| Mature trees Flowers Insects Butterflies Mammals, large and small Birds Bird song Birds darting in and out Scents The smell of blossom in the spring Seasonal changes Lots of different colours Sun shinning on the colours Different seasonal colours Watching seasonal changes Autumn berries Blackberries Elder flowers Elder berries Big and bushy hedgerows Tall hedgerows Thick ‘healthy’ looking hedgerows Shelter from the wind Traditional management ditches Banks Long hedges Hedge bottoms Hedge laying Old hedges - sense of history Roadside hedges Naturalness Field patterns Predominantly native species Diversity of management Practices/wildlife habitats Picnics alongside hedges Blackberry picking | Heavy trimming Ragged hedges Neglected hedges Litter beneath hedges Little, thin, low cut hedges Thorns Nettles Coniferous hedges Straight, uniform hedges Untidy hedges Blocked views Very tall hedges Hedgeless, exposed, bleak, and barren landscapes Exposure |

The public category generally expressed strong feelings of the need to share the earth’s resources with other species and frequently expressed sadness at the loss of hedgerows because of the resulting loss of “homes” for birds, insects and small

mammals [NR:18 15 13]. As with the questionnaire survey data, the term biodiversity was not a term members of the public generally used or were familiar with unless they had had contact with an 'expert'.

However, although wildlife was felt to be very important for this category it was not necessarily considered more important than other hedgerow features. Although a special enthusiasm was expressed by some people for birds and butterflies, most did not tend to single out any particular type of wildlife, considering animals, birds flowers and insects as equally important. Neither did they tend to separate out the wildlife from the other features of hedgerows:

The hedges near us are very colourful and I enjoy watching them change with the seasons. I like to see the variety of berries and flowers and the birds they each attract. [BPS17: 46-49].

This category also particularly emphasised wildlife diversity for the visual and personal pleasure it gave them. For example:

I suppose that's difficult in a way because I think all hedgerows are pleasing in some way or other. I suppose being a plant person and someone who enjoys flowers and plants, I like the hedgerows which have a lot of flowering things in them like dog roses and blackthorn and the early cherry plum, and then again they have berries at the end of the year. It's always nice to see the birds come and get the berries, so basically I think just the diversity of the hedgerow, its one of its really nice features. [CP1:129-135]

Differences were found in the public category as to the extent of their knowledge about wildlife, and in their particular enthusiasms and interests. Although they did not usually know what the species in the hedgerows were called or how and why they grew there, this was not generally felt necessary for their appreciation of the wildlife. Some people did, however, feel that knowing more about wildlife enhanced their appreciation, while others were influenced by the pleasure and enjoyment that was gained through membership of local wildlife groups, or national countryside organisations, or by volunteering for countryside conservation activities.

Hedgerow trees and shrubs

Members of the public category were also frequently found to be unaware of the ecological importance of hedgerow trees. However, as with the survey data where 69% of respondent said they liked hedgerows with trees, people liked to see them.

They felt hedgerow trees had a value to wildlife, particularly birds, and added visual interest to both hedgerows and the landscape [NR:18 23]. Trees were felt to be important for adding to the variety of wildlife found in a hedgerow. They were frequently described as making a hedge “less boring” and mature trees were particularly highly valued:

I think trees in hedgerows, hedges, are important as a food source. For example, oak trees and acorns, and apart from the butterflies and the insects involved. And I think it brings a bit of variety. [BFSI1 : 210 - 212]

The lack of trees and other landscape features in the Cambridgeshire study area made them especially important to respondents in this area, with respondents particularly mourning the loss of the elm. Generally trees were felt to be an important hedgerow feature. However, many of the public category appeared to find it particularly difficult to articulate exactly why they liked hedgerow trees and would respond simply that they liked them. One person felt that they did spoil the look of a hedge.

Although they were often aware of the expert’s preference for native species in the countryside, the public category were not always particular about whether or not a hedge contained native species, for example:

I think its nice to have trees in hedgerows. I suppose a lot of people complain about sycamores and often you see sycamores that have grown up in hedgerows, but even sycamores have their uses because they have lots of aphids on them in spring and the trees are covered in blue tits and great tits hopping about eating the aphids, so even the dreaded sycamore has some use. [CP157-161]

Some people did not possess sufficient knowledge to recognise what was, or was not, a native hedgerow species. An intense dislike of Leylandii was specifically mentioned by a number of people [NR:18 15 7]. This type of evergreen tree was consider wholly unacceptable as a hedgerow species in the countryside and was frequently commented on with hostility as a garden hedge, although its importance for birds was mentioned:

I must admit I would quite cheerfully pull out any hedge composed of Leylandii, which I consider to be an obnoxious plant because its just not appropriate for England and I don’t like it at all. If I had a wish it would be that all Lleylandii trees would die over night I think, in England, not in the countries they come from, but that’s a personal feeling. [BPSI5:49-54]

5.1.3.10 Hedgerows as signifiers of the changing seasons

As found in the survey data, hedgerows were particularly valued for their ephemeral aspects, providing colour in the landscape, scents and signs of the changing seasons. They signified the onset of spring and the coming of winter. White blossoms, a diversity of greens, and the reds and golden shades of autumn were all felt to be especially important features of hedgerows. For most people these aspects were considered as important as the hedgerow fauna:

One hedge appeals as in it has every type of leaf you can have in autumn. It's in a bit of a hollow and it's a long hedge, and when the sun shines on it has greens, yellows, rusts and reds, all on that hedgerow and its beautiful. [BFSI3: 201-204]

Thick, bushy, rather overgrown hedges laden with white blossom in the spring and bright with berries in the late autumn. [CP1: 56-57]

I like to see hedgerows in the winter time with dried leaves of certain types of hedges. Some are usually windswept and rather open, some rather dense with many types of bushes all together. [BPSI2: 26-36]

5.1.3.11 Hedgerows as part of towns and gardens

As found in the survey data, for the public category their local and 'ordinary' hedgerows were particularly important and garden hedgerows possessed a special value for respondents [NR:18 11]. They particularly appreciated hedgerows that were familiar to them and those they saw while out walking. Large, mature hedgerows were especially valued as they provided a sense of the town being "countrified" and evoked feelings of "seclusion" [BPSI4: 83-85]. They were the hedgerows physically and emotionally closest to people. They had a functional value as boundaries to their property, provided privacy, were aesthetically pleasing and brought the wildlife and 'countryside' close to their homes:

The public category felt that garden hedgerows were especially undervalued by 'experts' particularly in terms of the amount of wildlife they supported. One person even felt that it was unfair to single out farmers for payment of hedge maintenance. They felt pride in their own garden hedgerows which were perceived as rich wildlife habitats:

Q: What do you consider to be an important hedge?

A: The bottom of someone's garden where it looks quite decorative, especially if

variegated. An ideal home for wildlife and animals such as hedgehogs and frogs, which are in my garden. [BPSI2: 27-28]

Just over the weekend I found a small wood mouse in my privet hedge which I regard as rather sterile. Unfortunately it has to be because its between my garden and my next door neighbours garden, but there was in fact a wood mouse in there. And the sparrows love it, they use it all the time and there are other small birds like wrens and robins that use it for cover so even something like a manicured privet hedge is useful to a lot of species in my garden...[CP1:106-112]

Garden and urban hedgerows were particularly important to respondents who did not live in the countryside:

Hedges are very close (accessible to us) than most other landscapes which perhaps we need to travel to see them.[BPSI12: 36]

I like hedgerows/hedges in this area because they enhance the environment. Give a rural feel especially in Milton Keynes, they make it feel semi-rural. [BPSI4: 48-49]

As pointed out by the Manchester area Ramblers Association, urban hedgerows are those urban dwellers have most contact with:

“Many urban dwellers hardly ever walk in the countryside and take their recreation near home – possibly a short walk with the children or the family dog. Urban footpaths will often be bordered by well-established hedgerows...” (CDR 29.11.96)¹

They provided a means of access to wildlife, especially birds, which they would not otherwise regularly encounter. Respondents did not necessarily identify hedgerows in the wider countryside as being of most importance when considering what they liked to see:

Another hedgerow which I always like looking at is the long stretch of hedgerow along the race course on the way into Newmarket. There's a big huge hedgerow with a very wide base which runs along the road and goes into Newmarket and it sort of is along the boundary of the race courses. I always like that one. I suppose because its just so enormous and the base of its so wide and you think that it must be really good. Good cover for a lot of birds and insects and animals. I suppose it usually looks a bit neatly trimmed but at least it's not horribly brashed and sort of cut about in the way that some hedges are. [CP1: 236 244]

¹ ¹ The quotation marks indicate that a quotation originates from secondary data sources.

5.1.3.12 Hedgerows as part of a sense of place

Names of places relating to hedgerows, such as Thornborough, and their origins were important to people, providing connections with the past. People had a sense of pride in their locality and its past. For some people, hedgerows were important aspects of that past. The loss of hedgerows from an area where hedgerows formed part of the place name appeared to be felt particularly acutely. In this case, the idea of the village of Thornborough being without the thorn hedgerows from which it derived its name, was unthinkable for two of its residents. For local people the hedgerow history, the sense of place they provided, the wildlife, colours, smells and changing seasons were all interlinked:

One of the things I really, really love at this time of the year is the blackthorn in the hedge, which to me is just the most beautiful English blossom of all because its an indigenous English species and once the blackthorn has blossomed and you know where you can get your sloes for sloe gin later on in the year, its like the winter is over. The next thing I love especially if it's a good year is when the hawthorn blossoms, and we have a lot of hawthorn round here. In fact Thornborough is called Thornborough because of the hawthorn bushes that have been planted possibly as an attempt to counteract evil influences. Hawthorn's always planted as it brings good luck and again, possibly because of the dampness of the area, because I can imagine it will have led to lots of illnesses in the past. So there's a lot of hawthorn round here and that can look really spectacular when its blooming.
[BPSI5: 86-96]

5.1.3.13 Hedgerows as part of childhood memories

"My interest in hedges has its early origins in childhood hazel nut gathering in the fields near my home". (M.Hunt, Chepstow, CDR: 27.11.96)

Childhood memories featuring hedgerows were common. Nearly all the respondents were able to report tales from childhood involving hedgerows and tended to give lengthy, nostalgic, answers to this question. Only one of the taped respondents with a rural childhood did not have strong memories of hedgerows from their childhood, and many people with an urban childhood had strong memories. Many of the questionnaire respondents gave quite detailed descriptions of the small fields of their childhood landscape.

A childhood interest in the hedgerow wildlife, particularly birds and their nests, was frequently mentioned [for example, BPSI10: 218-225] and was evident in the questionnaire survey data. Family picnics and walks were also fondly remembered:

Hedgerows have featured quite a lot in my younger life, I used to go blackberrying when I was 9 years old in the fields near my home, sometimes found the odd sloe, I ate one once, it gave me a stomach upset. I used to play in the fields when younger, sitting amongst the corn or the hay watching the birds in the sky then go and land in the bushes as I used to call them or hedgerows now. I used to love it. Even picnic in the hedgerows, even made little camps in the hedgerows with groups of other children. [BPSI12:94-95,101-104]

For some, the countryside had provided a space where they could be on their own and the hedgerows provided a private place for children to play. Making dens in hedgerows, in particular, was frequently mentioned:

As a child a group of us had a den in a hedge. It was high up and we could hide and watch people going by without being seen. Also in some fields further down from that lane there was a footpath winding through some fields where some horses and sometimes cows grazed. If the horses came after us we would run up a large oak tree which was part of the hedge. Its large roots were partially exposed and we could catch hold of them to pull ourselves up to safety. [BPSI7; 76-82].

The question concerning childhood memories for the self recorded tapes, specifically asked for memories concerning hedgerows. However, people, particularly in the public category, responded with accounts of hedgerows and the countryside in general, suggesting that they did not appear to separate out hedges from the rest of the countryside but viewed them as an integral part. General countryside memories were combined with hedge memories.

Several people had grown up in London and moved out later in life. Those who had lacked access to the countryside as children particularly appreciated the contact that they had with it once they moved out of the city. Urban dwellers, particularly those without a rural childhood, tended to speak in more general terms about the landscape and about their appreciation of the overall landscape rather than particular elements of it, such as birds or plants.

5.2 THE PUBLIC'S RELATIONSHIPS WITH OTHERS

This section details the categories that emerged from the in-depth data (see 4.4) concerning the public's relationships with the farmer and expert categories in relation to hedgerows.

5.2.1 Hedgerows as theirs

Although they recognised that hedgerows were owned by the farming community, the public category felt that they also belonged to them as part of their heritage. The view of landscape, countryside, scenery etc. as having a common ownership was a common feature within the public data.

For this category, the value of hedgerows and the countryside generally lay beyond the economic. As a result they were particularly angry that farmers or land owners were able to profit from the loss of something they valued.

There was also a feeling among some respondents that for the common good, sacrifices were necessary:

But there is an increasing need economically, if people are to survive, for them to be big farmers and I think that that doesn't help at all. I suppose the sort of things that I would suggest not just to farmers but to other people, and they are not necessarily palatable, is that we need to share the earth with everything on it that it's not just there for us, that profits are not that important and that sometimes you have to make sacrifices for the good of the earth as a whole, but I don't think that goes down very well with farmers. [BPSI5: 182-189].

5.2.2 Hedgerows as needing protection

Most respondents felt that all hedgerows were important and should be protected. However, while members of the public generally felt that hedgerows were in need of some form of legislative protection, some respondents also demonstrated an understanding of the farmers' position:

The Government's right to bring in legislation, but really it's up to the farmer if he thinks that's right to pull up a hedge, then he must have a good reason to do it. Farmers should be given the choice. [BPSI2:46-51]

For the public category the main purpose of grants was to retain 'their' heritage. However, there were mixed feelings about grants. While some people felt that

grants should be given to farmers for managing hedgerows, others felt that they should not. Among those who did not agree with grants or believed them to be a waste of money, there was a feeling of unfairness, that farmers were wealthy enough, that they already received sufficient or too many subsidies and that grants were something of a luxury:

Government should not waste money with grants. Hedgerows have been there even before the farms and before this Government, so it's up to the farmer himself to look after the hedgerows on his property. Farmers get too much money for things they shouldn't be given money for. Farmers don't even touch the hedgerow in some of the places I've seen, they are just left to grow and grow, then when they do get too bad I've seen them pulled up. Some pull up their hedges just to sell their land for housing, that should not be allowed. Once a hedgerow goes then the field goes and you lose the beautiful scenery that hedgerows form. [BPSI2 61-69]

One person felt that it was unfair to provide grants only for countryside hedgerows:

I don't particularly think that grants particularly should be given to farmers etc. to look after the hedgerows. A simple calculation will show you that the average domestic garden has the potential for far more hedges and hedgerows than any farming area. And if grants are, could be, applied to farmers, then they should be applied to every household in the country, domestic or whatever. [BPSI10 172-178]

People who supported grants to farmers felt that hedgerows were part of the country's heritage and had an intrinsic value or value apart from their utility value. They were therefore deserving of the money spent on them. Respondents were generally found to be unsure about what the costs to farmers actually were and whether what they would like to see was economically viable. Some people also expressed concern about the financial costs incurred by the farmer in managing hedgerows which were part of everyone's heritage, while others expressed concern that there should be some way of monitoring that tax payers money was being spent appropriately:

I've got nothing against this, the Government gives out grants for all sorts of things and if hedgerows are part of our heritage its got just as much right to get a grant as an old building. [BPSI3: 76-78]

N: Yes in a way you will just be paying farmers to, well apart from ecological or even agricultural reasons, you are paying farmers to keep the countryside looking nice for people who just use it as a decorative thing, but that's OK.

C: I think there would have to be some sort of criteria as to how they were managing them if they were being given grants for them. [BPSI9: joint interview, 150-151]

5.2.3 Hedgerows as managed features of the countryside

Respondents felt that farmers did not necessarily hold their hedgerows in sufficiently high regard. When asked what they would suggest to farmers, people commented:

I would suggest they respect them as they play a part in the balance of our wildlife. [BPSI7: 63-64]

They thin them after nesting time and stopped spraying weed killer round the edge of fields. [CP4: 62-63]

While none of the respondents lacked interest in the countryside, most of this category, and particularly those who had little contact with the countryside, were not very knowledgeable about 'farming as a business' and the functions hedgerows may have for farmers. Respondents were concerned that farmers should maintain a variety of species in their hedgerows and that they manage them in a way that was sympathetic to the wildlife. Yet most people were unaware of the ways in which a hedge could be managed or that hedge management was necessary in order for a hedge to remain a hedge:

C: I've got a complete lack of knowledge about hedgerows really.

N: agrees. [BPSI9: joint interview, 182-184]

Some respondents were also found to be unaware that laying and particularly coppicing, were ways of restoring and maintaining the hedgerow rather than damaging it. People often said they felt they wished or should know more [NR:18 8 4], but this was usually viewed in terms of knowing more about the hedgerow's wildlife or history rather than the practicalities of hedge management.

Most respondents particularly liked to see traditional forms of management such as hedge laying. They were aware that such techniques were not necessarily practical or financially viable for farmers. Respondents in Cambridgeshire were less likely to see hedgerows that had been laid, whereas in Buckinghamshire hedge laying has

become a common feature of hedgerows around Milton Keynes, and this was reflected in the responses. The Buckinghamshire public category particularly liked to see hedgerows managed in this way and appeared to gain comfort from the continuation of rural traditions:

N: Yes I like overgrown ones, ones with trees in, ones that have been layered, you know where they chop them down and bend them down.

C: yes they're quite pretty.

N: It's a rural tradition, that really. [BPSI9 joint interview; 97-99]

A particular important hedgerow locally is in the village, because it has been beautifully laid. [CP10: 71-72]

This category were, however, also found to be unaware that much of the 'traditional' management they saw was work that had been undertaken as a result of grant assistance for farmers.

5.2.3.1 Hedge trimming and hedgerows as sign of caring

The public respondents noticed what farmers did in the countryside. They particularly noticed when a hedgerow had been trimmed back severely or laid:

I only notice what they are doing when they've actually been pruned or when they've been re-laid, I think I called it earlier or re-done. [BPSI3: 66-68]

I suppose I do notice on the roads that I travel every day like the road to work. If its been brashed as I was saying before, I think that's the right term and you see all those awful broken bits sticking off the hedge then I feel really bad about it. I just think about all those poor old insects and things, they are probably mashed along the way. So I think, yes, one does notice what farmers are doing to the hedgerow and if you see a nice hedgerow then you sit up and take notice of it. [CP1: 178-185].

The presence of hedgerows also represented evidence for the continued existence of nature and wildlife in the farmed landscape:

It is heavily agricultural and without any demarcation between the fields it would be just one huge ploughed area as far as the eye can see, and just to have hedgerows around field boundaries or around farm boundaries just as I said earlier, gives the landscape some structure and at least you know then that there are species out there which can live. [CP1:116-120]

Hedgerows provided a visual sign that farmers cared about the landscape and the wildlife on their farms. Over-trimmed or badly trimmed or neglected hedgerows indicated a lack of caring.

Most respondents particularly disliked seeing hedgerows severely cut. For example:

I hate to see a thin hedge that has been trimmed right back to the bare wood so that the hedge is literally transparent and really is acting purely as a fence hedge for retaining cattle etc. [BPSI10: 115-117]

Flailing - it is so ugly and damaging. [CP10: 44-45]

As with the questionnaire survey data, hedge trimming was an aspect that respondents felt very strongly about [NR:18 7]. Signs of what they perceived as 'bad' hedgerow management led some respondents to feel that management, should not necessarily be entrusted to farmers, for example:

I think it is not before time, there should be some control over how the hedges are maintained and not left to the individual farmer to decide. [BPSI7: 57-62]

Some respondents also expressed their annoyance at 'inconsiderate' farmers who allowed overgrown footpaths and roadside hedgerows.

Apart from feeling that mechanical trimming created a visually unattractive hedge, respondents were concerned for the wildlife and their 'homes'. There was an overall preference for hedgerows that were allowed to grow large, bushy and more wild in character. Thick bushy hedgerows also represented a "healthy" hedge:

I like the blossom of May and Dogrose, thick healthy hedges and ditches. I don't like thin straggly unhealthy looking hedgerows.[CP4: 40 and 42-43]

This is consistent with the survey findings where respondents were found to have a preference for large bushy hedgerows.

5.2.4 Understanding

Despite the apparently conflicting views over hedge management, understanding was also an important category within the data [NR:18 13 10 1]. While members of the public category felt that farmers primarily viewed their farm as a business and were therefore more concerned with profit than conservation, nevertheless, throughout the interviews I encountered much understanding of their perspective:

I think that farmers have increasingly become big business people I think farmers are probably no different to many people, I think there are good and bad farmers. [BPSI5 180-182]

Most respondents did appreciate that farmers were having to balance their management with the economics of running the farm as a business. Some respondents also felt that farmers' awareness of environmental issues was improving.

5.3 WHERE THE PUBLIC PLACE THE BOUNDARY TO THEIR SYSTEM OF INTEREST

The level and willingness of the public to participate in this research demonstrated the high level of interest in hedgerows among this category. Many respondents expressed considerable concern over their loss and felt passionately about them. The public possesses a special relationship with hedgerows, conjuring up a rich diversity of images, emotions and feelings about hedgerows. Not only do they admire their visual beauty and their smells and sounds, but they have a special place in the English culture. The respondents were found to express strong feelings of hedgerows as contributing to their sense of place and as part of their heritage. They particularly appreciated hedgerows which were close or local to them, those that are part of their everyday lives and memories. For the public category the special was not the scarce or the rare, important hedgerows were their own garden hedgerows and the ordinary hedgerows of their local landscape. For urban dwellers, hedgerows brought the countryside closer to them.

The findings presented in this chapter are consistent with a study of local peoples' perceptions of hedgerows in a French landscape (Burel and Baudry, 1995), which, found that hedgerows were important for local people as windbreaks, for their birds, flowers, visual aspects and for giving a perception of nature in an agricultural landscape. They are also consistent with a study by Coeterier and Dijkstra (1976) who found that laypeople appreciated hedges and landscapes at different scales and preferred sheltered small scale landscapes and diversity in the landscape. The appreciation of diversity and structure in the landscape found in the data is also commented on by Parson (1995) who notes that the considerable literature on scenic beauty has demonstrated that people prefer 'natural' environments which

are characterised by complex scenes, particularly open grassy areas punctuated by occasional groupings of shrubs. Further, many of the findings relating to landscape in this chapter are similar to a broader study of the countryside carried out by the Countryside Commission (1997a), who interestingly also commented on the way that people liked the 'greenness' of the countryside.

However, while this research discovered that for some people hedgerows provide an intimate landscape, Burel and Baudry (1995) found that people preferred an open landscape rather than one enclosed by very high hedgerows where the densely vegetated areas could cause them to feel hemmed in.

That people experience hedgerows and have a relationship with them, rather than simply valuing them for a particular feature, was evident from the data. People did not appear to view hedgerows in isolation but in the context of the rest of the landscape and in the context of their everyday lives. Their appreciation includes all the senses and images which are always presented in a context. Singling out isolated features that they appreciated was not something this category could do with ease. This was evident in the mental images and the interview and questionnaire data and is again consistent with the findings of Coeterier and Dijkstra (1976). When researching perceptions of a hedged landscape in the Netherlands, Coeterier and Dijkstra found that non-experts evaluated landscape not as an analytical process but as a conception of the landscape as a whole, with all aspects of landscape being integrated into the evaluation. This provides an indication as to why early attempts in this study to put a value on particular hedgerow features failed. Stating preferences for individual features or attempting to place a number value, thus simplifying the complexity of their perceptions, was taking what they like out of its context.

The publics' relationship with hedgerows in this study encompassed a complexity of subjective, unquantifiable qualities. This complexity was particularly evident when considering comments concerning landscape character and sense of place. The words that respondents use when discussing hedgerows, such as 'love', and 'passionate' demonstrate the strength of the relationship that the public have with hedgerows. While not academic terms, they are no less important for providing descriptions of the importance of hedgerows.

The data indicates that strong childhood memories of the countryside and hedgerows had influenced how people felt about them as adults and many of the

respondents felt themselves that their childhood memories had influenced their views on wildlife and conservation as adults. A variety of people with an interest in the countryside and with whom the research had been discussed during the course of the project, had also recognised influential experiences from their childhood which they believed had influenced their views of the countryside, supporting this finding. The importance of contact with nature and the way it is linked to memories of childhood experiences has also been found by Burgess, Limb and Harrison, (1988b)

As Brassely (1998) points out, the 'ephemeral landscape' has largely been neglected by the academic literature. He notes that the ephemeral landscape may be said to comprise of the way the transitory aspects of landscape, such as the colours and textures of fields or woods, or the sea and sky, impact on its appearance. Yet evidence within the public data indicates its importance as a feature of peoples' relationship with hedgerows. The ephemeral is particularly captured in peoples memories, for example, of hedgerows and the countryside on warm sunny days. It was also an aspect which was difficult for the respondents to articulate. It was apparent within the self-recorded tape data, which was rich in descriptions about feelings towards hedgerows, but less evident in the questionnaire survey data, demonstrating the value of the former approach. Brassely identifies two categories of ephemeral landscape, natural and human induced. Both types of ephemera are present with hedgerows and interact together to produce many of the emotional responses found in the public data. For example, the colours and textures of the hedgerows will change with the seasons and moment by moment according to the weather or angle of the sun. The management of hedgerows such as trimming off the blossom or berries, taking out the elder and brambles, affects not just the wildlife within a hedge but also the way it appears in spring or autumn or at certain moments of the day.

On many occasions during the research members of the public category commented on how important they felt the research was. They indicated that they felt that their views were often not considered. King and Clifford (1987) comment that "We cannot make sensible decisions about influencing change unless we know what we have and who cares about it." It is evident from the public's relationship with hedgerows presented here that the public care a great deal, yet as the following chapters demonstrate, it is particularly this relationship which has largely been ignored both within the research community and the discourse

surrounding the legislation. While much information has been collected on the public's view of the countryside, for example in attitude surveys (Commission Countryside Commission, 1997a) and academic research has been carried out into the peoples perceptions of landscape (Sinah, 1995), few in-depth studies have been carried out on what ordinary members of the public consider to be important in 'their' countryside or landscape.

The public's relationship with hedgerows was found to be firmly rooted in emotional, subjective values. As members of the public, aspects of this relationship were also apparent in the other two categories, i.e. the experts and farmers. As demonstrated in the following chapters, farmers and experts also possessed an objective or rational dimension to their relationship, resulting in the drawing of quite different boundaries. For these categories the subjective was frequently suppressed by a 'rational' view of hedgerows. Chapters 6 and 7 move on to consider the farmers' and experts' relationship with hedgerows.

CHAPTER 6

THE FARMERS' PERSPECTIVE

Farmers are the owners and managers of hedgerows. This chapter sets out the relationship that farmers have with hedgerows and with other people concerning hedgerows. It also considers hedgerows in the context of wildlife conservation generally. Like chapter 5, Section 6.1 begins by examining the wider perspective which represents a more general view of farmers' issues. The in-depth perspective set out in section 6.2 focuses on hedgerows and section 6.3 then examines where the farmers are drawing the boundary to their system of interest.

6.1 A WIDER PERSPECTIVE

While there is much written on general issues concerning farmers, particularly on wildlife conservation generally, there is less published literature specifically referring to hedgerows. Although loss of hedgerows has been of concern for several years, it is only recently that there has been an interest in farmers' perceptions of their hedgerows. Evidence for the wider perspective of farmers' presented here is drawn from academic research on farmers' perceptions generally, the consultation documents and select committee evidence for the 1997 Hedgerow Regulations (Department of the Environment, 1997).

6.1.1 Farmers' Relationships with hedgerows

6.1.1.1 *Hedgerows as functional*

The Country Landowners Association (CLA) make the comment:

“...many (hedgerows) are redundant in an agricultural sense, and their maintenance involves costs with no economic return to the business.” (CLA, House of Commons 1998a).

However the National Farmers Union point out that despite their costs hedgerows remain important to farmers:-

“It is clear that for many farmers, field boundaries will remain an important part of their farm, even when they play little functional role”. (NFU, House of Commons, 1998a).

In a study of 49 farmers in lowland England, Hooper (1992) found that most farmers were in favour of hedges and those that were not had neutral feelings towards them, although about half the farmers had removed hedges to enlarge their fields. Battershall and Gilg (1996a) found that traditional farmers, in particular, valued semi-natural habitats, including hedgerows. While in their study of agricultural landscapes, the Countryside Commission (1997) found that stockproofness was no longer a major consideration for farmers and that the marking of boundaries was their most important function. Hooper (1992) found that boundary uses were secondary to their value for stock, commenting that even when not stockproof they apparently provided a valuable visual boundary which prevented stock from attempting to escape.

Visual aspects have also been reported to be a very important function of hedgerows for farmers. The Countryside Commission (1997) found that an attractive appearance rated highly across a range of areas of England and was considered of prime importance in the Yorkshire and Herefordshire study areas. Indeed the use of hedgerows for screening, as a wildlife habitat and for sporting reasons were felt to be less important. Although Macdonald (1984) found that the majority of farmers were interested in wildlife, Hooper (1992) found visual amenity to be the most valued feature. Hooper also comments that the most common reason given in the literature for retaining hedgerows on arable farms is for game, but that aesthetic and landscape values are also mentioned. However, his own study found less than 10% of farmers interviewed mentioned game as a benefit. Several authors also comment on shelter as a reason for farmers retaining hedgerows (for example, Silsoe College, 1995; Hooper, 1992; Countryside Commission, 1997).

6.1.1.2 Hedgerows as a sign of care

Farmers have been found to take pride in the appearance of their farms and the way they farm and hedgerow maintenance appears to be an outward sign of care

for their land. Farmers' tendency to favour annual trimming has been noted by Silsoe College (1995) and The Countryside Commission (1997). Carr (1988) also reported that more than half of the 49 farmers she interviewed cut their hedges annually. Stock farmers were found to allow their hedgerows to grow taller than those on arable farms. The Countryside Commission (1997) also found that in some areas farm boundary hedgerows were allowed to grow taller.

Farmers have been found to be conscious of being judged by their neighbours (Carr, 1988; Countryside Commission, 1997). That farmers notice what other farmers do has also been noted by Lowe, Clark, Seymour and Ward (1997), who comment on the way that notions of good husbandry are linked with tidiness of fields. McHenry (1997) found that a successful farm, where 'nature' was viewed as under control, was the sign of an attractive landscape to farmers, while Beedell and Rehman (1996a) comment that untidy areas were a sign of an inefficient farmer.

In a study of 122 farmers in south west England participating in environmentally friendly farming schemes, Battershill and Gilg (1996 and 1996a) found that farmers took pride in maintaining landscape features such as gateways and hedgerows, and that their views of conservation included values such as tidiness and good husbandry. They found that untidy farming was viewed as "bad conservation" leading to a "run down" farm. Carr (1988) also found that farmers frequently referred to the unfarmed areas of their farm using words such as "bad, derelict, neglected untidy or overgrown" whereas farmed land was described as "neat, tidy productive or presentable". The Countryside Commission (1997) comment on the way that active management is always perceived by farmers as something 'good' while doing nothing is 'bad'.

6.1.2 Farmers as wildlife conservationists

That farmers are sympathetic towards wildlife has been found by several studies (for example, Carr and Tait, 1991; Battershill and Gilg, 1996a). McHenry (1997) reported that farmers were happy to work for the conservation of wildlife species which did not conflict with running the farm as a business and which were felt to be attractive, such as barn owls, whereas foxes, deer plants and weeds were not as welcome. This was also noted by Beedell and Rehman (1996a) and Carr and Tait (1991) who comment that farmers used the term 'wildlife' for those species which were beneficial to farming. However, Carr (1988) noted that few of the farmers she

interviewed took hedgerow conservation measures other than allowing their hedgerows to grow taller.

Battershall and Gilg (1996a) also found that a farmers' age was an important factor, with older farmers most resistant to the recent conservation drive. Younger farmers, especially those trained at national agricultural colleges, were found to be more interested in food marketing than conservation issues and new farmers were more willing to apply for incentive schemes or become organic farmers. Farmers were also often found to have a "nostalgic enthusiasm" for traditional farming and several mentioned traditional farmed landscapes were their favourite.

6.1.2.1 Farmers as conservation aware

Several studies have commented on the way that conservation is often viewed by farmers as secondary to the main agricultural activities (Carr, 1988; Beedell and Rehman, 1996a; McHenry, 1997). These studies have also found that farmers are often constrained because they feel conservation is too costly and that conservation schemes place too many controls over their farming activities. In a study of 30 farmers in Bedfordshire, Beedell and Rehman (1996a) found that some farmers believed conservation meant taking large areas of land out of production, and that some viewed conservation as a "fashion" or an "extra" which was only integrated into normal farming practices on a minority of farms.

Nevertheless, studies on farmers attitudes (for example, Battershall and Gilg, 1996a; McHenry, 1996) indicate that farmers are becoming increasingly aware and more comfortable with conservation and wildlife on their farms. This was also the view of either the farmers or Smiths Gore Surveyors, of York, who stated in their response to the Consultation Document that

"we consider that landowners and farm managers now recognise the conservation value of hedges" (CDR:22.12.96).

Beedell and Rehman (1996a) also comment on the way that some farmers are becoming aware of the need for a "softening of approach". This view is shared by the National Federation of Young Farmers Clubs who also viewed themselves as the "crafts men and women of the countryside":

"Today the goal posts have changed and we are responding in a very positive way to the incentives provided to put back hedgesas the next generation of farmers,

we recognise the great losses to our countryside and to our way of life that has been farming and agriculture.” (CDR 2.12.96).

Evidence of changing attitudes was also found in a study of agricultural landscapes throughout England (Countryside Commission, 1997). Farmers were found to be more comfortable with discussing issues such as landscape beauty than in a previous study in 1972.

Battershall and Gilg (1996a) found that many environmentally friendly farmers were generally very knowledgeable about wildlife. However, while traditional farmers tended to have the most environmentally friendly farms, these farmers were found to lack knowledge and interest in wildlife and conservation. McHenry (1996) also comments on the way that for some farmers who were farming in a traditional and environmentally friendly manner, conservation was viewed as interference and therefore not accepted. Beedell and Rehman (1996a) note that some farmers appear satisfied with the state of their own knowledge on environmental issues and therefore felt they do not require advice. However, the studies by Lowe, Clark, Seymour and Ward (1997) and McHenry (1997) comment on the way that farmers recognise that farming practices can be environmentally harmful, but often find it difficult to acknowledge that their own actions are damaging the environment.

6.1.2 2 Conservation as a source of income

In a study concerned with the way farmers construct the concept of nature conservation, McHenry (1997) found that farmers simultaneously possessed a number of different interpretations. Conservation could be viewed like farming, as looking after the land, or as something separate for which they should be rewarded. McHenry found that the value of nature without a productive use was not generally considered and that farmers therefore tended to expect a return for their efforts.

As shown in Appendix 7, grants are available to farmers for conservation on the farm. The NFU regard grants for hedgerows as ‘payment’ for providing a ‘public’ good:

“Reimbursement for the costs of managing and retaining field boundaries is a legitimate request where the public good outweighs any private benefit.” (House of Commons, 1998a).

They have also commented on the way that the key factor that would enable farmers to afford to farm in a more generally environmentally friendly manner is for more grant aid (House of Commons, 1998c).

This was also the view of the National Hedge Laying Society who viewed hedge work as a public benefit provided by farmers for which they should have compensation (House of Commons, 1998b). In their evidence to the Select Committee, they also expressed concern over the term 'grant' being used feeling that the term "compensation" was more appropriate:

"This is a very different meaning. The general public sees something like a grant as getting money for old rope." (House of Commons, 1998b).

However, the NFU also felt that there was a need for less bureaucracy, pointing out that farmers were encouraged to join schemes if they did not have to enter the whole farm or were given a one off grant. They also felt there were problems with incentives which were defined nationally when management costs varied greatly regionally (House of Commons, 1998c).

6.1.3 Farmers' Relationships with others

6.1.3.1 *Farmers as caring*

That farmers view themselves as responsible and as stewards or custodians of the countryside has been commented on by several academic studies (Carr, 1988; McHenry 1996; Erickson and De Young, 1992-3; McClintock, 1997; Lowe et al., 1997). Lowe et al. (1997) comment on the way farmers feelings of attachment to the land are linked with feelings of a personal responsibility for it. However, Carr (1988) found that farmers also had "a strong sense of land as private property" and this is born out in many farmers feelings against increased access to their land by others and a dislike of control over their farming activities. Both Carr (1988) and McHenry (1996) comment on the way that farmers feel threatened by controls on the way that they farm.

Farmers' feelings of stewardship are balanced by their need to run a business. A number of studies comment on the way that farmers view farming as a business (for example, Carr, 1988; McEachern, 1992; McHenry, 1996; Beedell and Rehman, 1996a; McClintock, 1996). However, McHenry (1996) also found that farmers

expectations of their land to be productive meant that they gave little consideration to the idea of the environment having intrinsic value.

6.1.3.2 *Farmers as misunderstood*

Several studies comment on the way that farmers are conscious of their image (McHenry, 1997; Beedell and Rehman, 1996a). McHenry (1997) found that for some farmers, recognition of the fact that they received public money, combined with their awareness of their image, made them feel they should make an effort to provide what the public wants. Lowe et al. (1997) also comment on the way that farmers generally view environmental concerns as external pressures.

The image of farming is something that those representing farming interests also comment on. For example, in their evidence to the House of Commons Select Committee the Country Landowners Association comment that:

“Most land managers are just as concerned to sustain the environmental value of their holdings – in the widest sense – as to produce crops or quality livestock”.
(CLA, House of Commons, 1998a).

The National Farmers Union (NFU) also comment on the way they feel their public image is unjustified:

“Often public concern has been focused on individual causes celebres and implied that farming activities have an overwhelming negative impact. This has been misleading and disappointing for the many farmers who have made significant contributions to landscape conservation in England and Wales. It also overlooks the fact that our countryside remains an internationally valued asset that sustains a profitable and increasingly important tourism industry.” (NFU, House of Commons, 1998a).

In a study of countryside metaphors McClintock (1996) comments on the way farmers feel that those telling them what to do, do not understand the countryside or the role of the farmer. He found newcomers and commuters to be particularly blamed for their lack of understanding. Carr (1988) also noted that some farmers possess a strong impression of ‘outsiders’ as extremists or cranks. McHenry (1996) also comments that farmers felt that they were losing their status, that their rights were being undermined and that they were not held with the same esteem as they used to be.

Hedgerow loss

The Countryside Commission study found that farmers were generally aware of the public outrage over hedge removal and were aware of the aesthetic importance of landscape features. They were content to maintain hedgerows so long as it did not cost too much. Changes of use from stock farming to arable did not automatically result in a wholesale loss of hedgerows. Farmers apparently considered their local landscape context and the amenity value of their land with many farmers spending time and money on management practices which did not yield financial rewards.

That hedgerow loss is not entirely the fault of farmers, is noted by the National Hedge Laying Society in their evidence to the Select Committee:-

“ Strangely enough, if a council gives planning consent for a housing development, new roads, greenfield site, etc., THAT OVER RIDES THE NEED TO GET CONSENT TO REMOVE HEDGES, so loss of hedges for non-agricultural purposes are not recorded! Here the general public who want these developments, are themselves responsible for hedge loss! But in their minds this does not register, they consider land owners and farmers are guilty of such a crime! Why are town hedges excluded? Wildlife has more need for them there!” (National Hedge Laying Society, House of Commons, 1998b).

The NFU also comment that:

“A particular matter of growing concern to farmers is the growing number of examples of vandalism and road accidents in the countryside, some of which can result in destruction of hedgerows” (NFU: CDR, 29.11.96).

6.2 AN IN-DEPTH PERSPECTIVE

This section sets out the findings from the farmers in-depth, face to face interviews and farm visits and the discussion group (see table 4.4). Although section 6.1 has examined views from academic studies, in line with one of the principles of grounded theory, i.e. that theory should be grounded in the actual data collected, the interview data was analysed before seeking views from the academic literature.

This section begins by considering hedgerows in their landscape context and then examines hedgerows in their farming context. However, as it is difficult to separate out farming and landscape aspects, there is inevitably some overlap. As with the

public perspective, the reference to the NUD*IST data is given after each quote¹. Differences were apparent between the study areas, however, as the sample size was small, only those differences particularly apparent are commented on.

6.2.1 Farmers' relationships with hedgerows in their landscape context

6.2.1.1 Hedgerows as part of an English landscape

All the farmers considered hedgerows to be an essential part of the English landscape:

Son: (on seeing the hedged landscape from the air when flying back from abroad) England- if you fly back, its England.

Father: If you go to the continent it's just vast strips of nothing - barren. First thing you notice - you feel shut in, but when you've been back for a few hours it becomes natural again. [BFSI3:179-183]

Well I think they (hedgerows) are probably one of the most important things in the landscape, in the landscape picture as a whole, yes. [CF4: 57-58]

Farmers also experienced feelings for hedgerows as part of a common heritage, however, this tended to be considered in the context of the farm as a business:

Don't think any of ours are that interesting, but I have seen some, up in the Chilterns where they have just about everything you can think of in it. Yes that's important. It's our heritage really, we should preserve that. But there again, you know there are some hedges that are just basically thorn and where they are interfering with the workings of the farm, I suppose there's a case for taking some out, but I haven't done it. [BFSI4: 361-365]

6.2.1.2 Hedgerows as providing a patchwork

All farmers felt hedgerows contributed to views, breaking up the countryside, giving it diversity and pattern. Hedgerows were appreciated for the way they provided a "patchwork" in the landscape:

Oh yes, they do sort of break up the countryside. I mean, you can, for sort of example, particularly where we've got one block of land there's a lot of small field

¹In this case, the initial letter identifies whether it is a Cambridgeshire (C) or a Buckinghamshire (B) farmer.

around and neighbours as well and it's almost like Devon, you know. Lots of little fields and it's quite different from this other way, where we've got some neighbours with very big fields and the contrast is quite startling. We've got quite a nice view over that bit of the farm from here, so you do tend to be aware of the patchwork of it all and if they weren't there it would be completely different wouldn't it. [BFQ2: 99-103, 293-295]

However, the patchwork effect did not necessary rely on the presence of hedgerows. This farmer valued the patchwork of his own farm's landscape:

Well if you go up to the top of this hill there's some lovely landscape. The best one I've seen is between Brecon and Wells, when you go over the range there and you look across from Brecon that way, its just a patchwork quilt absolutely. And it is actually from the top of this hill, they say we are prairies, its absolute nonsense, I mean there's a lovely view. [CF1 93-97]

It was the different forms of management and different crops that provided the 'patchwork' effect as hedgerows were largely absent from the farm.

6.2.1.3 Hedgerows as part of the distinctive character of their local landscape

The farmers interviewed particularly demonstrated an appreciation of their local landscape character. For the Cambridgeshire farmers hedgerows played an important role in providing visual structure in their flatter landscape:

I think they contribute an enormous amount actually. They offer some structure to the landscape. For example, if it's flat like it is round here, then a hedgerow brings some height and perspective into the picture....[CF1:45-46]

Although the Cambridgeshire farmers were found to appreciate small fields and hedgerows in other parts of the English countryside, they did not feel that small fields were appropriate for the Cambridgeshire area, noting the need for different landscape types as being important:

I mean my daughter, she has just been at Cirencester and she says there are lovely hedges round there and I can see that, hills and fields are different. And then when you get towards Hertfordshire its more undulating and probably larger areas of trees. Cambridgeshire is not noted for that. I suppose it should keep its own character to some degree and not try and copy others. [CF5:89-95]

The Cambridgeshire farmers took particular offence at being thought of as 'prairie farmers'. They expressed a love of their more open landscape and several references were made to how the area historically had been an open field system. Even those farmers with a keen interest in hedgerows felt that they may not actually be appropriate for the area from a landscape character perspective [for example, CF2]. Farmers in this area were, however, planting hedgerows as a means of dividing up and introducing pattern to the landscape as well as for their wildlife contribution:

We are putting in a hedgerow for a specific reason, to divide the fields up and produce food for the wildlife and to look nice. The hedgerows are really bigger ones, making more of a divide, more like a row of trees really, like the beech tree that we've got. [CF6: 320-323]

Trees appeared to be a feature of the landscape that was of particular importance to the farmers in this region with a feeling that they were more appropriate landscape features than hedgerows. Some of the farmers in Cambridgeshire had been planting trees under the Woodland Grant Scheme, particularly on odd pieces of land which the farmers felt were unsuitable for the main farm crops. There was some evidence that they recognised their impact on the landscape and were planting trees in an irregular, more natural pattern to create more 'natural' features in the landscape [for example, CF6: 309-311].

Trees were also a feature often mentioned as something they liked to see when travelling:

M: So what sort of things do you like to see when you go elsewhere?

F: I think undulating hills, rolling hills and the trees, largish areas of trees.

[CF5: 281-282]

Interestingly the Countryside Commission (1997) also comments on the way that in areas where farmers have removed hedgerows they are more likely to plant copses or belts that can be managed as woodland, particularly for game purposes, rather than planting new hedgerows. Grant aid combined with feelings of loss of local landscape character (the devastating loss of the elm trees from this region was particularly mourned), appeared to be influential in stimulating an eagerness to re-establish trees for Cambridgeshire farmers, apparently more so than hedgerows.

The Buckinghamshire farmers on the other hand, all expressed a preference for smaller fields and a diversity of field size. They possessed a particular dislike for the large uniform, open, prairie type fields of East Anglia, describing them as “barren” and “bleak”. Although they viewed their farms as a business, they found what they perceived as the exploitative nature of prairie style of farming distasteful. For example:

Cambridgeshire - so barren and naked, horrendous. They have created a lot of problems for themselves with wind erosion. Trying to rectify it with wind breaks. But they went too far. I think it's the most drab, dreary, wouldn't want to farm in regions like that. [BPFSI3: 184-187]

The tractors they've got, buying new cars every year, I know because we have an advisor from Cambridge, he deals with them. It wouldn't interest me at all to live over there, I think it's awful. I like a pattern, you know, a rich pattern, a mixture between crops and livestock, bits of area that's not cultivated, you know a bit of wild stuff, so its not my scene really. [BFSI4:171-174]

So, the farmers in both areas expressed a dislike of flat and featureless landscapes, but they differed in their perceptions as to what that actually meant. Interestingly, while the Buckinghamshire farmers felt that Cambridgeshire was flat and featureless and not the kind of landscape they would wish to farm, the Cambridgeshire farmers felt that the Fens were flat and featureless and not the kind of landscape they would wish to farm.

Well it's the geography, it rolls a bit don't it. It's a bit flat from here onwards, isn't it. There's more trees, its more broken up. Sort of in the middle here, Cambridge and the fens, I don't like the fens at all. [CF3:80-82]

6.2.1.4 Hedgerows as providing a sense of mystery

For many of the farmers hedgerows appeared to add interest to their work. Like the public category, hedgerows provided a sense of mystery:

Hedgerows, ever since I can remember, a hedgerow is a boundary, a boundary to a field, but a boundary to vision and expectation. You can go up to a field and you can look in that field and think, this is a nice crop and, what wildlife have you got ? And you walk across it and go through a new gateway and there is something completely unexpected, you don't know what you're going to see. And that is what's part and parcel of hedgerows, always the unexpected, you don't know what you are going to find and see. [BFSI3: 236-234]

For this profitable arable farmer, hedgerows were perceived to have no functional value, but were highly valued on his farm for aesthetic and ephemeral reasons.

6.2.1.5 Hedgerows as ephemeral

Farmers also valued the contribution of hedgerows to the changing colours and moods of the countryside:

One hedge appeals in that it has every type of life you can have in autumn. It's in a bit of a hollow and it's a long hedge. And when sun shines on it has greens, yellows, rusts and reds, all on that hedgerow and it's beautiful. [BFSI3:101-203]

6.2.1.6 Hedgerows as part of childhood memories

Many of the farmers interviewed had vivid memories of childhood on farms or in the countryside. Typically, the farmers' interviewed with a concern and love of the countryside and its wildlife, were introduced to them at a young age by family members, particular grandparents or other close relatives:

Stories: yes - Every afternoon my father and the cowman at home and myself, we used to go round with the gun and the terriers. And we used to go round the hedgerows and terriers would go in the hedge, and you'd go rabbiting or maybe a pheasant or a pigeon. [BFSI3: 205-208]

Those farmers who had not lived on a farm as a child appeared to be strongly influenced by their exposure to the countryside while very young. Having the opportunity to develop a relationship with the countryside at an early age could also be a reason for the belief of one farmer that his love of the countryside was something innate:

It was there when I was born, yes I used to wander off and they used to send off search parties for me, I could go on for hours, I'm just fascinated by it. I don't mean I'm no expert, I'm not an expert, I'm just somebody who enjoys it and its sort of allied into farming in a way. [BFSI4: 76-79]

For some, childhood events held a lasting impression. The dynamiting of trees was particularly remembered by the one member of the Norfolk discussion group as being influential:

I care about nature in general. My father was a farmer and one of my earliest memories is of the trees in the park being dynamited and it was awful and that affected me very deeply and I've wanted to change it ever since really. I'm very

much in tune to the trees and hedges. I want to see them growing, I want to see them all the year round. This time of year (autumn) is probably my favourite time of year, but the dead trees are just as lovely as the new ones. Yes it was when I was about 3 or 4, dynamite. [Norfolk Discussion group: 927-933]

For those farmers brought up on farms, memories tended to be tied up with the function of the hedgerows on the farm. For example, one Cambridgeshire farmer remembered hedgerows as being “wild” and therefore neglected.

M: ... several people have mentioned particular memories that they have, do you have any particular memories of hedgerows in those days?

F: No not really. That they were a nuisance I suppose, well I mean they'd got to be cut and obviously they were neglected in the 20's and 30's. The countryside was run down. And when you got hedges spread out the width of this room and they'd got to be cut down by hand, it wasn't 'till 1950 or 60 before they got hedge cutters and things you see. [CF1: 201-203]

And a Buckinghamshire farmer commented:

The hedgerows in those days were totally wild. Every year you would go and lay a percentage, 2-3 every year, across farm at different stages. So it was more varied in those days. Now when you look across there are only little trimmed ones as now, with the machines, you cannot afford to lay them so you keep them trimmed. [BFSI3: 209-212]

6.2.1.7 Hedgerows as wildlife habitats

All the farmers viewed the wildlife on their farm as an asset, although the extent of their enthusiasm varied [NR:18 15 13]. All the farmers referred to the pleasure they got from seeing wildlife:

I get my thrills, if you like, from observing animals and things on the farm because I can't just go off and, and go to the Wash or what ever because I haven't got time, so I try and produce something here that gives me pleasure and people in the future no doubt. [BFSI4: 74-75]

It is so monotonous if you don't see them. When you are sitting in a tractor or combine all day, if you see a fox or rabbits it makes you alert and makes the day more interesting. [BFSI3 : 221-223]

This did not, however, mean that they had an interest in wildlife conservation. Several of the farmers expressed the perception of nature as something that took

care of itself and required little intervention. For example, one farmer who was reluctant to take advice on his hedgerows commented that:

I go on gut instinct with how to do things. Nature will take care of itself a good lot [BFSI3:103-104].

Farmers were often not specific about what they liked, viewing wildlife in general terms. However, they generally liked seeing birds:

We've put all this in at our own expense, and it's lovely. You come up here and there's birds all over the place and lots of wild things and it's nice. We've got owls back. [CF6:64-65]

They were also drew boundaries around the type of wildlife they would tolerate. Some species were viewed as pests or vermin e.g. foxes. Whether a species was viewed as an attraction on the farm or a pest depended on the type of farm and the numbers of that species locally. For example, foxes, rabbits and badgers were a problem on some farms but not others. Trees were also reported to provide look out posts for predators such as magpies. However, farmers were generally very tolerant of trees in their hedgerows as their visual or wildlife benefits generally appeared to outweigh the perceived problems:

M: Do you feel that trees shading out the hedgerow and making them gappy is an issue at all?

F: Yes I think it is, but it would be awfully boring if all the British countryside was just a series of hedges with no trees because I think trees in hedgerows, hedges are important as a food source e.g. oak tree and acorns and apart from the butterflies and the insects involved and I think it brings a bit of variety. [BFSI1: 205-212]

Hedgerow Species

Although native species were viewed as important among farmers, against the advice of 'experts', farmers were happy to plant exotic species. Farmers had their own views on what should or should not be planted in a hedgerow. One farmer stated "I go for variety". He explained that:

Now most of the experts tell you that you only plant oak and ash. I don't agree with that, so I think there's masses of oak round here and masses of ash and there's quite enough to support the insects and birds we've got, so you know I go in for a little bit different. [BPFSI4: 103-107]

One farmer who felt planting native species to be important admitted to arguing with his wife over her love of Horse Chestnut trees, which he did not feel was a suitable hedgerow tree [NR:18 15 7]. Brambles were also found to be a source of conflict between one farmer and his wife. While the wives valued them highly for their blackberries, the farmers felt they were a nuisance, encroaching on their crops, creating untidy hedgerows and getting tangled in machinery. Elder, often said by the public to be valued for its flowers and berries, was also eradicated by the farmers as it was considered invasive and created a gappy hedge.

Although diversity of hedgerow species was generally appreciated by the farmers, like the public category, they did not generally consider diversity in terms of biodiversity. Rather, the term tended to be associated with the scepticism they felt about the detrimental effects that farming is reported to have on wildlife. For example, farmers were generally found to be reluctant to believe the statistics the experts produced on the environmental effects of farming, especially where their own observations did not match what was being reported. In particular, several farmers refused to believe that farmland birds were in decline. For example, one farmer said:

I think it was on the news yesterday. They've got some survey that all the birds were declining in huge number in the last ten years and they said it's all to do with the intensive agriculture, and ripping out the hedges. But I wouldn't have thought that's got anything to do with it. In the last ten years virtually no hedges have disappeared, has there? I can't think of hedge I've seen that's been ripped out in that time and agricultural practice would have been similar and people are more aware of what they are doing so I can't quite see why it should be worse in that last few years really. [BFQ2: 121-129]

Hedgerows as a habitat for birds and game

It was evident from the interviews that the main wildlife interest for farmers was birds. Many of them expressed an interest in birds and managed their hedgerows for birds generally or for game, although none were involved in game commercially, with game keeping being viewed as a sport more for their own pleasure rather than a way of making money. Hedgerows valued for their bird life were allowed to grow taller and bushier with wider and less tidy hedge bottoms. Farmers with a keen interest in birds were more sympathetic to smaller field sizes, although, the

importance of field margins as bird habitat was balanced with the need to maintain profits.

For the farmers who had an interest in game, hedgerows provided important habitats [NR:18 15 2 5]. Providing good habitats for game was also viewed by some farmers as enhancing the value of their farm. Hedgerows and wildlife conservation in general, were viewed by some farmers as increasing the capital value of the farm [NR:18 15 6], particularly if they were eligible for grant assistance. However, the Norfolk group felt that in their area this was not the case and that hedgerows with their associated management costs and loss of productive land, would decrease the value of a farm.

The hedgerows value for game birds appeared to be a significant influence on farmers feelings towards retaining hedgerows and in managing them, particularly if they were an arable farmer [NR:18 14 4]. Although all the farmers used chemical fertilisers and pesticides, those with an interest in game and conservation were careful about keeping it out of the hedgerow bottoms and some had sought advice on how to manage their margins for game. Of the farmers favouring grass and sterile strips, the primary reason was for game, with conservation being secondary.

There was evidence that farmers who had developed an interest in game birds and as a result sought advice, had subsequently developed an interest in conservation work on their farm generally. In some cases their interest in conservation had overtaken their interest in game.

For four of the farmers, hedgerows provided an opportunity to show off some of the conservation measures they had undertaken. One farmer was particularly proud of the interest shown by local academics, a second farmer in interest shown by the RSPB and another of the interest shown by the Game Conservancy in his conservation measures.

6.2.2 Farmers relationships with hedgerows in their farm context

6.2.2.1 Hedgerows as in the way

For all the farmers interviewed, field size was viewed as a balancing act between the need for profit and the need to retain hedgerows or field margins for visual or conservation purposes. All had fields of varying sizes. This generally depended on their use, particularly whether they were used for crops or stock. However, the

Buckinghamshire farmers were generally more prepared to retain smaller fields than those in Cambridgeshire, even if they were mainly arable farmers. Very small field sizes were kept when the farmer had a particular use for them, for example as paddocks:

F: They do, except for the very small fields, we've got quite a few fields that are only 5 acres big and I suppose it would be tempting for some farmers to take out hedges, but we haven't.

M: And why don't you take them out?

F: Well I can use them as paddocks and I obviously think that its beneficial, in terms of wildlife and the ecology. [BFSI4:55-59]

However, farmers in Buckinghamshire were, in some cases, actually reducing their field sizes as the optimum field size was now perceived to be around 30-40 acre:

No I won't take any out and I like to think we manage the hedges in a sympathetic way, and I think its good to protect the hedges. I think there are certain cases though for hedges coming-out because fields are totally uneconomic for combines to go round, and if you're in cereals. But there I don't think you need 1500 acre fields. I mean, my ideal field would be 25 acres in an arable situation and we've got one that's 29, that is the biggest..... [BFSI4:344-349]

Farmers in both Cambridgeshire and Buckinghamshire felt that it was impractical to farm with field sizes as small as those in areas such as Devon and Cornwall.

6.2.2.2 Hedgerows as functional

All the farmers interviewed had a reason for keeping their existing hedgerows [NR:18 15 2], whether as stock barriers, people barriers, shelter or for game. However, farmers generally felt that they had no direct monetary value to the farm and were, in this sense, a financial burden:

F: Yes they do, they do, they cost a lot.

M: In the order of?

F: £1200 per year. Yes it's dead money if you like. It just doesn't have any benefit, well not directly, to your production or your income. [BFSI4; 132-134]

Farmers with mostly or wholly arable farms particularly perceived hedgerows as having no direct value to the farm, unless they had an interest in game. This did not mean, however, that they did not perceive hedgerows as serving other functions. They generally recognised the role that hedgerows played in the landscape:

M: The purpose of hedgerows for you would be?

F: None whatsoever – in economic terms.

M: So you'd see their function in terms of?

F: Landscape, delivering a landscape that people aspire to and for habitat, for all the other species. [CF2:179 - 183]

M: And what would you say is the purpose of them?

F: Well mainly from a wildlife point of view, we don't use hedgerows for sort of stock fences and that sort of thing, its purely to break the landscape up and for wildlife to live in. [CF4: 467 - 470]

Those farmers with stock and mixed farms viewed hedgerows differently from those with arable. They had a value as fences for retaining stock, although they were seldom stock proof and required sheep netting or additional fencing. They were also valued highly for the shelter that they provided from the wind, rain and sun. For example:

A properly managed hedgerow round stock is worth more than the land it stands on for shade and shelter. [BFSI3: 170-171]

Although the wood from hedgerows was often used for personal purposes, none of the hedgerows in the Cambridge, Norfolk and Bucks study areas were used commercially for timber and fuel. Hedgerows in these areas were not substantial enough to generate large quantities of wood for sale, even if there was a market for it. One tenant farmer commented that it would not be worth growing hedgerow timber to sell even if there was a market as the wood would belong to the landlord and not to himself, [BFSI4: 98-102].

Hedgerows as owned

Access was found to be of concern among farmers [NR:18 3], particularly in Cambridgeshire where many of the farms are open to the roadside. Some of the farmers' concern was based on bad experiences, for example, with people from the nearby towns. Although the farmers without an interest in birds or conservation felt that it was impractical to place new hedgerows among their crops, they could see value in planting hedges along their boundaries and beside their footpaths as these hedgerows prevented access to their land and maintained privacy:

Obviously roadside ones I want to keep just to give the place security
[CF5: 417-418]

F: We are aiming to plant on the boundaries really to enclose the fields. It's a problem with outside people really. That's the aim at the moment. We are going round anywhere where there isn't a ditch at the moment and planting a hedge. And I think from then on we'll be probably hedging on one side of the ditch.

M: Is this to keep people out, or?

F: In the long term to keep people out. [CF6:105-112]

Such hedgerows were often allowed to grow taller than those on other parts of the farm, typically to around six feet.

Although the farmers were against unsupervised access to their land, most were not opposed to organised visits. Several farmers appreciated that their farm and their hedgerows had a functional role to play in educating people, for example, local schools or conservation groups [NR:18 15 3].

6.2.2.3 Farmers as business people

It was found that for all farmers a complexity of factors were operating on their decisions about their hedgerows. However, as the following example demonstrates, just because farmers had none or few hedgerows on their farm did not mean that they did not care about them:

F:... well it wouldn't be very economic to start with, we want hedgerows where our stock is, that's where we want them.

M: But having said that you appreciate them when you go elsewhere in the countryside?

F: Oh yes, I like to see hedges. We've got an open, hedgeless, hilly field, I'll show you that, but I mean the council would like us to put a hedge there. Well I know what would happen if we put in hedges, we would have all the itinerant travellers living up there for the next 20 years..... [CF1:164-172]

Farmers were generally aware to a certain extent, of what they should according to the experts be doing. However, it was not that they did not care, but that they felt unable to practice what was recommend to them. They saw themselves as businessmen. The importance of hedgerows for reasons other than as a functional part of farming operations had to balanced against the economics of the running of the farm. Farmers did, however, view themselves as different from other business people, in that farming was not just a job, but was also a way of life and the farm was their home [NR: F 4 1].

6.2.2.4 Hedgerows as managed

Hedgerow management was generally perceived as a peripheral activity which was often carried out during slack periods when they arose. Farmers felt that much of what they did or did not do with their hedgerows was actually beyond their control. For example, managing them was dependent on the weather and seasons, soil type, what they could afford.

The type of farming, whether stock or arable, undertaken in a particular field strongly influenced what was perceived to be appropriate hedge management. The differences in hedgerow management on arable fields compared with those round stock fields was reflected in the differences between the Cambridgeshire and Buckinghamshire farmers. On the mixed farms, arable field hedgerows were managed in a similar manner to those of a wholly arable farm. Arable field hedgerows were generally kept tidier and at a lower height than those for stock; 3-5 feet rather than 6-10 feet, although one arable farmer felt that tall hedges were not really a problem. Shading and encroachment of crops by tall hedgerows was reported as a problem and a reason for keeping hedgerows low, neat and tidy. However, there were mixed feelings about what was an acceptable maximum height for hedgerows on an arable farm. It was generally felt by the Cambridgeshire farmers that a hedgerow should be a reasonable size if it was to be bothered with.

Hedgerows round stock fields were allowed to grow taller to afford greater protection for the stock. For these fields, shade was perceived as an advantage rather than a disadvantage. For those who allowed their hedges to grow tall, the maximum hedge height was dictated by the maximum reach of the hedge trimmer, usually about 8-9 feet. The mixed farms therefore had a greater diversity of hedge shape and height and farmers were also found to be more willing to allow hedges on the fields without arable crops to be less tidy.

There was a prevailing perception that frequent trimming was more appropriate as it meant trimming was much easier to do and there was less strain on the equipment. It also prevented the hedge from encroaching on the crops and kept down perceived pest plants such as brambles, as well as creating what they considered to be a visually attractive hedge. All the farmers, not just the arable farmers as might be expected, felt that trimming in late winter was often too difficult and trimming was frequently carried out in the autumn. For arable farmers it was

thought impractical to trim at a time when the fields were planted with winter crops. For many of the farmers, heavy clay soil meant that winter trimming was perceived as being impossible unless the ground was frozen, something now occurring less and less frequently in the regions studied. The difficulties with the heavy soils were self evident from the winter farm visits. Although there is likely to be less pressure on a stock farmer concerning when trimming may take place, and those with an interest in conservation were keen to trim when they were advised to, heavy clay soils also prevented them from late winter trimming.

Where hedge contractors were used, they were found to be influential in what the farmer did. There was some evidence that they had an effect on the composition of the hedge, being less tolerant of certain species such as brambles, and could influence the time of trimming as a result of their need for work.

One farmer gave an example of his neighbour who severely cut his hedgerows every year and suggested that as a tenant farmer he was not bothered about them. However, in this study, no difference was apparent between tenant farmers' and owner occupiers' attitudes to trimming, although there was evidence that tenant farmers had been discouraged from conservation on the farm by their landlords' attitudes.

6.2.2.5 Hedgerows as a sign of care

All the farmers had a strong sense of pride in their hedgerows and their management, even those with few, or what others may consider as poor quality, over-managed hedgerows. [F 6 1]. The way that a farmer managed thier hedgerows could have a significant impact on the visual landscape, (see figures 6.1 and 6.2). The Cambridgeshire farmer [CF1] who owned the hedgerows in figure 6.1, for example, had a large mainly hedge-less arable farm, and gained particular pride and pleasure from maintaining a few tidy, substantial hedgerows in an otherwise hedge-less landscape.



Figure 6.1: An example of a large hedgerow



Figure 6.2: An example of small hedgerows

In many respects farmers tended to view their farms as extensions of their gardens and their favourite hedgerows were frequently those visible from the farmhouse (see figure 6.3)



Figure 6.3: View of a Cambridgeshire hedgerow from a farmers home.

The appearance of the farm was important to the farmers, including the hedgerows. As one farmer commented “The visual aspect is not necessarily the first consideration but goes into the equation”, [BFSI1:163-164].

All the farmers interviewed were found to have a particular view of what they considered was important visually. Generally, tidiness was an important feature of hedgerows. Annual trimming was viewed as essential for an attractive hedge, particularly by those who did not have a particular interest in conservation. Farmers reported noticing and having an interest in what other farmers were doing on their farms. Neat and tidy hedgerows were an indication of care on the farm. Roadside hedges in particular, were cut more regularly and kept neater, even if they were allowed to grow tall [NR 18 26].

You manage them because they have to. Managed there is no in between. If you leave it for 3-4 seasons it becomes totally overgrown and an eyesore then.
[BFSI3:216-218]

Although these farmers were often aware that it was recommended that hedgerows should not be kept too neat and tidy, they still felt it was inappropriate to maintain them in any other way:

Well mine are neat and tidy, but today they don't want anything neat and tidy.[CF1:138]

Now these modern ones it's just an absolute trifle. 'Cause if you do them every year then you don't have any clearing up at all. Some of them wait to leave them 'till about every 4 years and I think they look bloody awful, they smash the things to smithereens, if they're done every year they look lovely. [CF1: 204-205]

However, the farmers who had a particular interest in wildlife conservation were more willing to allow their hedgerows a degree of untidiness.

A seemingly trivial concern, but one which appeared to be an important concern for both farmers and members of the public categories concerning tidiness and signs of care, was litter beneath hedgerows. The issue of hedgerows encouraging litter was also commented on by Carr (1988).

6.2.2.6 Conservation as uncool

There was evidence within the data that wildlife conservation on the farm had an image problem, with some of the farmers interested in conservation reportedly being teased. Such attitudes appeared to have developed during agricultural college. Those doing the conservation or horticultural courses were reported to have been perceived as “cissys” who were not “real farmers” [NR:18 5 4]. The Norfolk group also reported on one local farmer who went as far as to hide the fact that he carried out conservation work on his farm for fear that he would be teased about it and some Buckinghamshire farmers reported being teased or thought of as eccentrics by their neighbours.

F: Maybe I'm a bit daft really, most of the farmers round here think I'm a bit daft,

M: Do they?

F: Well I think so, because I'm a tenant you see and I actually plant a lot of trees.....

M: Another thing I've had people say to me is that conservation is seen as being rather cissy and they don't like to be seen to be doing things.

F: Yes I think that's true, I don't think it gives a macho image, but then I'm not a macho person. [BFSI4: 61-63 and 232-235]

Another farmer mentioned how his friends and neighbours saw him as something of an eccentric because of his keenness for hedges and conservation and teased him about it [BFSI1:146-150].

Generally farmers appeared willing to carry out conservation measures on areas of the farm which were not useful in other ways, indicating that they were not opposed to wildlife conservation, but they did not wish it impinge on their farming operations:

Under the trees at the top of the hill, there its always shaded so we leave a 6m strip, which makes a lot of sense because we can't get crops under there. [CF5: 487-490]

6.2.2.7 Farmers as researchers

Experimenting was common among farmers, particularly those with an interest in game and or conservation generally. In some cases this interest in what their neighbours were doing had led them to try out things for themselves. Such farmers displayed a strong sense of pride in what they were achieving. They usually had contact with a wildlife advisor or the Game Conservancy and their interest had spurred them on to try different things out for themselves.

The manager of one of the UK's most profitable farms, felt very strongly that profit and conservation were compatible. He felt that he was not only among the top producers, but also among the top environmental farmers. Again a love of trying things out for himself was expressed and demonstrated by a complex and time consuming method for restoring his hedgerows which he had devised. Such farmers also possessed a long-term view of conservation on the farm.

F: I cut about 200-250m each year and over the course of, that's going to allow me to completely rejuvenate all of the hedgerows on the farm, so that when somebody else comes along afterwards they are going to have a nice fresh start rather than something that's old and decayed. Its going to take about 40 years.

M: Gosh, so a long term thing, isn't it a tremendous hassle though?

F: It certainly is, but the results are worth it. [CF2: 276-282]

Farmers felt they were very much at a learning stage in terms of conservation on their farms. They were willing to try things and see if they can be fitted in with their farming operations. They were willing to adopt measures which did not prove too expensive both in terms of time and money or did not result in what they considered to be too much disruption of the business operations. If something proved successful then they often felt able to try something further.

Although those farmers interviewed who were keen on wildlife conservation on their farm noticed the difference that their conservation practices had made to the farm wildlife, they indicated that it was often difficult to judge for themselves the impact of their conservation work. They commented that they would welcome a method for assessing for themselves their achievements.

Where farmers did experience a sense of ownership in their conservation efforts, for example the Cambridgeshire farmer with a demonstration farm or those farmers who had been shown interest in their farms by local professionals, their enthusiasm for wildlife conservation and trying things out was clearly evident.

The next section moves on to look at the relationships that farmers have with people concerning their hedgerows and the landscape generally.

6.2.3 Farmers' relationships with others

6.2.3.1 *Farmers as caring*

Farmers viewed themselves as custodians of the countryside, [NR:F 4 3]. They generally felt that they possessed a privileged position in the countryside and all expressed feelings of moral responsibility to the rest of society. All of them believed that they were undertaking responsibility for the management of the countryside for future generations. Those restoring or planting new hedgerows particularly viewed them as an asset for future generations.

For some of the farmers, there were very strong feelings about the privilege of their position and the responsibility that such privilege brings:

M: Do you have anything that might have influenced the way you feel about the environment now?

F: Yes, this question of duty, the main fact is that I've had to justify my presence here, it hasn't come of right. Because I've had to justify my suitability and the opportunity to be here. I appreciate that I'm extraordinarily fortunate to be here, whereas I think that a lot of people that end up there as of right or because they're incapable of doing anything else, do not fulfil the same duty. [CF2: 224-230]

This farmer had also worked outside of farming and this may have given him a more open, or wider, perspective on what he was doing.

6.2.3.2 *Farmers as misunderstood*

The farmers were found to be genuinely concerned about their public image. They felt they were often portrayed negatively, particularly by the media, as selfish or untrustworthy [F 4]. Such feelings led to them considering carefully the image they may be portraying and there was evidence that they had changed their behaviour accordingly. One farmer, for example, commented:-

Oh yes, well I think we are producing food and I think the perception the public have of you has got to be as good as possible, you know if they do want to be inquisitive and come and see what's going on you can get people doing that, so I think you've got to have your house in order. [BFS14: 278-282]

Most of the farmers interviewed felt that irresponsible farmers were in the minority and that attitudes were changing [NR:18 6]. The son of one farmer interviewed [BPF13] felt particularly that the younger generation were more informed. They therefore resented controls over what they did. They felt they were doing their best to maintain a viable business under difficult economic circumstances. Some farmers felt that there was a lack of understanding between advisers and conservation groups on the impact such advice would have on the farm as a business. Control over 'their' land was important and they felt misunderstood by town people and local 'outsiders', i.e. people who had moved to the country from the town. Such people were perceived as being largely ignorant of farming and the countryside and their way of life. Conservation organisations and particularly the Ramblers Association, were frequently perceived as interfering, for example:

There are lots of things that happen in the countryside like there's an old dead tree or something and you go and saw it down. Everybody will be up in arms about it because that tree has now gone. They don't actually realise that that tree has finished its life and you are just tidying up. (Others in the group agree.)

[Norfolk Discussion Group 616-623]

Recognition was also an important category to emerge from the farmers' data. Farmers frequently felt that what they did was not generally recognised by others. One tenant farmer had been particularly encouraged as a result of winning landscape awards. Such recognition and also interest from conservation experts, like that experienced by the two farmers with disused railways on their land, resulted in a strong sense of pride among farmers.

Some farmers indicated that they did not usually consider what local people felt about hedgerows, yet they considered themselves as responsible. For example, one farmer stated - "Don't give a damn, I manage the farm as a going concern" [BPS13; 128], yet he also expressed strong feelings of responsibility as a custodian of hedgerows and the landscape to the wider society. There frequently appeared to be a general separation of the local and wider society in this way among the farmers.

However, farmers were found to rarely have contact with people from outside the farming community and one farmer was prepared to admit that lack of contact contributed to a lack of understanding of others' perspectives.

But as far as townspeople are concerned I never really get involved in the conversations to know what they think. You know we move mostly in the farming circles and cows are my interest, I suppose they are my main interest. [BFSI4:453-437]

Hedgerow loss

For all the farmers, loss of hedgerows was perceived as being historical. Both the Buckinghamshire farmers and the Cambridgeshire farmers were reluctant to believe that hedgerows were currently being pulled out, for example:

Well there's hedges round quite a lot, some there's none, but I mean they're in bigger blocks altogether you see. But we have planted hedgerows, I mean they keep on about all these hedges being grubbed up, there's more hedges being set today than there is pulled up. I've driven right across to Wales and I've never seen any hedges coming up. [CF1: 22-25]

Most of the farmers felt that the way they were perceived by the public and experts as being the main culprits concerning hedgerow loss was unfair. They cited new housing and road developments as having as much, if not greater, impact. In this respect they felt that the public were as much to blame as they were. Vandalism and loss through road accidents were particularly mentioned by several of the farmers. None of the farmers in either Buckinghamshire or Cambridgeshire, had considered that hedgerows could be lost through lack of management or over management.

Hedgerow legislation

In their evidence to the Select Committee, The Game Conservancy Trust stated that they have as yet had little "adverse comment" from landowners and farmers concerning the 1997 Hedgerow Regulations, (House of Commons, 1998a). However, this may be a result of a lack of awareness.

Farmers were found to be frequently unsure of what, in practice, the new hedgerow regulations would mean for them. Although the NFU had apparently distributed leaflets and there had been information in the farming press, full information about the regulations appeared to have failed to reach the farmers. Those who were aware of the regulations appeared to have only a vague idea about what they entailed. For example, I found myself confronted with questions from them about what they were now allowed to do or not do.

Does that mean, you know the one I showed you up there, that we cut down and allowed the re-growth to come through, is that the sort of thing you need to have to get permission to do? [CF6:264-265]

Most of the farmers interviewed, when given an explanation of what they entailed, felt that the regulations would not affect them as they were not planning on taking any hedgerows out. Cambridgeshire farmers in particular felt that the legislation would not really affect them and were less opposed to legislation than the Buckinghamshire farmers. However, they were concerned that it could lead to further controls over what they did with their hedgerows. Some of the farmers felt that the legislation would put them off planting new hedgerows for fear there may be restrictions placed on them at a later date. They also felt concerned about potentially being forced to manage their hedgerows in a way that they did not want to:

M: In terms of the legislation, how do you feel about that?

F: Catastrophic. As soon as you start putting restrictions on hedges and controlling and levels of control, why should anybody plant a hedge again and risk that its going to get legislation slapped upon it? [CF2:43-46]

However, most conceded that some form of regulation may be necessary for the few irresponsible farmers:

I didn't think there was any problems really with what was being put forward because you are dealing with the isolated few that destroy things. The vast majority of the work that goes on, on a completely unnoticed basis, people don't worry about that, so you end up spoiling the whole because of a few people that make a mess of it. [CF2:67-70]

The need for fairness was continually raised. Farmers felt that their reasons for wishing to take out a hedge should be considered. Most felt that if they were to take a hedge out they would have a good reason for doing so and that they wish to replace it. There was therefore a strong feeling that any controls over farmers should be flexible.

M: And the hedgerow legislation, how do you feel about that?

F: I think that's right, I'm not against it really as long as people can change things. [CF3:189-193]

6.2.3.3 Hedgerows as links with the local community

In the past there appeared to have been a closer link between hedgerow management and the local community. For example, the Norfolk group commented on how hedge work used to be carried out by local people for free in return for the use of the wood.

Years and years ago when I was a boy there used to be people come round, well several people a year asking to do it. You didn't have to go out and find somebody and a lot of them would even do it for nothing to take the wood, but you don't get that any more, people have all got central heating now. (Others in the group agree.)
[Norfolk Discussion Group: 695-702]

Today these links between hedge management and the local community are no longer present and hedgerows are valued by local people for different reasons.

6.2.3.4 Influential relationships

There was a general feeling emerging from the data that those particularly interested in conservation on the farm had had their interest fostered by a complexity of experiences and relationships with others. In some cases countryside interest had begun at an early age (see section 6.2.1.6). In other cases a trusting relationship with enthusiastic experts had developed an interest.

Family members appeared to have an influence on the way that hedgerows were managed, particularly the more aesthetic aspects of the farm. Farmers' wives particularly appeared to be concerned with visual aspects and preservation of the hedge blossom and blackberries. Several of the interviews took place with the farmers' wife in the background, and although none wished to participate I had the opportunity to speak with some of them informally during the farm visits. Although the wives felt that they did not have much influence over their husbands, approval from their spouse of what they did appeared to be important for the husbands. This was indicated by the way the farmer, during an interview, would often seek an approving comment from his wife for what he was saying. Both the farmers' interviews and the Norfolk discussion Group indicated that farmers were influenced by the views of others:

M: Who influences your decisions do you think with regards to the hedges?

P: (farmers' wife) I have no influence at all. He does what he thinks, I agree with what he does, he doesn't cut every hedge every year do you, you do what has to

be done.

T: (farmer) You tend to do things how you feel. Sometimes you think well I'll give that hedge a really good cut back this year, and another time it doesn't look that big this year. I sort of see how I feel. Sometimes it hangs over the field a couple of yards and you think, well you don't worry about it. I suppose you are influenced to a certain extent by television and things in what you read and that and going round others peoples farms as well and see they've got something and think yes I'd like something like that, where as you wouldn't have had the idea if you hadn't seen it.....

Li: He doesn't cut that very often, but Anne (his wife) keeps him under control.

Lu: Does she?

T: You are to a certain extent influenced by other people. When everybody keeps complaining about the hedge down the road you feel that's important.

[Norfolk Discussion Group: 745-761]

Passing their farm to family members or enhancing the capital value for future sale were also indicated as influences on attitudes towards environmentally responsible farming. There were also indications that time spent outside farming may lead to a wider view of farming activities and foster an increased sense of responsibility and duty [CF6; CF2; BFSI1].

When asked directly, members of all the categories felt that the media played a role in how they felt about hedgerows and conservation generally. TV, radio and the newspapers were cited and particularly wildlife programs were mentioned. Farmers also frequently mentioned articles they had read in the Farmers Weekly.

Wildlife conservation advice: The importance of trust

Although farmers were confident that they managed their hedgerows appropriately for the farm as a business, they generally lacked confidence in managing their hedgerows for wildlife. They were often found to be unaware of the detail of hedgerow management and unsure whether what they were doing was right:

Yes probably we don't realise what we, what the implications are. For instance the quicks that we are supposed to be planting on this piece we are doing, whether there's any advantage. I mean there's quite a few different species you can get planted you can get the lists from the nurseries. And obviously we will put a mixture in but whether one particular sort is better for the wildlife or not we are not really quite sure, we are working a bit in the dark in many ways. [BFQ2A: 113-120]

All the farmers interviewed had had some contact with wildlife conservation experts. There was, however, mixed feelings about the advice received from these organisations. Trust was an important factor among farmers both in trusting the advisor and the advice given [NR18 7 8 and 7 1 2 11]. They were particularly concerned about the kind of advice they were given and the advisors themselves and often felt unsure about how or where to go to get 'good' advice. Farmers wanted to be able to call someone with local knowledge for instant advice at the point in time when they needed it.

Personality and the ability of the advisor to relate to the farmers appeared to be a particularly important factor in whether or not advice was effective, as indicated by the apparent influence particular advisors had had on farmers. There was a high degree of trust associated with one particular advisor who farmers held in high regard [BPROF6]. This advisor had previously been a farmer himself and related particularly well to the farmers who trusted his advice and appeared to be strongly influenced by him. Farmers also trusted the advice of other farmers whom they respected. They had a preference for partnerships rather than being told what they should do. Several farmers felt they had a good relationship with the Farming and Wildlife Advisory Group (FWAG), where the farmer and advisor would negotiate what could be done.

Both farmers and advisors reported that farmers did not always accept the advice they were given on management. They appeared willing to listen but would then follow their own instincts, particularly when they felt that the advice contradicted their own experience. This was particularly the case for one farmer who had himself previously been a hedge contractor and felt that the advice he was given and the obligations under Countryside Stewardship were inappropriate. He also felt angry that his hedge expertise was not regarded seriously [CF3].

Concern was also expressed about paying for conservation advice and whether it was worth the money. Several of the farmers had experienced difficulties with establishing new hedge plants following advice and were inclined to abandon what they were doing as a result. They expressed annoyance over the advice they had received, which had not been appropriate to their circumstances. They also had an expectation that the 'experts' would know what should be done:

F: It is very, very difficult to get hedges to meet up the gaps and get them to grow, they haven't been terribly successful.

M: Do you think it's a bit dry?

F: I don't know, the people I've asked, FWAG and that, they haven't really given me an answer that makes any sense. [CF6: 81-22]

And one of our hedges got completely overgrown with this cow parsley type stuff and I thought oh that's killed it, and I whipped it out later on. But they said, oh we don't really like that and we're thinking, she wasn't here to see that, she said it's surprising how the hedge will survive through it, but they don't, if you get a lot of grass all over them in the first year. [CF3:124-126]

Such experiences were commonly reported in the farmers interviews, particularly among the Cambridgeshire farmers. However, guilt was also often expressed when farmers discussed doing something that they believed was not generally approved of.

The age of the advisor was also important. Farmers felt that they wanted advice from someone who had experience and an understanding of their farm as a business, someone more mature. They were particularly opposed to receiving advice from what they perceived as 'young graduates' who had little experience of giving advice or of knowing what it was like to run a farm:

M: Some people with farming experience?

F: Yes, yes. It's not a question of the people, it's that, not quite, retired farmers, but people in their 40s and 50s rather than 21. They say - I don't know really I've only had the job a week. A friend of mine, he's just done it through his tenancy agreement and he says, people coming out, they don't know what they're on about. I mean I want hedges and I like hedges, its just that you feel...[CF3: 141-147]

There was evidence that local conservation advisors such as FWAG could have considerable influence over how farmers felt about the conservation value of their farm. One farmer, for example, commented that until about 10 years ago he managed his field margins for his interest in game whereas now he manages them for their wildlife value [CF3].

One of the difficulties with FWAG is that the organisation relies on farmers seeking them out for advice. Although this results in vital advice being given to those who wish to do something, it is not reaching those who could possibly be encouraged to do something if pushed a little. This point was commented on by the members of the Norfolk discussion group:

Lu: FWAG is good because as R... said he's actually invited to farms, whereas

Li:and I have to invite ourselves and that's a subtle difference.

Me:but then he's only picking up the people..

T: that would want him to come in any case [Norfolk Discussion Group: 680-687]¹

Farmers and grants

The view that management for conservation could only be done if it is economical and farms were profitable was taken by most of the farmers. There was a feeling that they did not want to spend much money on managing their hedgerows. Grants in this respect were seen as enabling. For example, farmers receiving grants felt that if it was not for the grants they would not have carried out the conservation work they had done and that wire fences would be a more economic solution than hedge restoration. All the farmers viewed hedge work as expensive, especially if it involved traditional management such as laying, contracting out the work or hiring equipment.

For some farmers grants were perceived as a source of income, potentially adding value to their farm, particularly if they qualified, for example, for the Countryside Stewardship Scheme. Among the farmers who had received grants for hedge work, grants were viewed as providing an opportunity to restore the farm hedgerows and landscape. For example, one farmer viewed the work he undertook on his hedgerows as providing him with the opportunity to restore the farm to how it once was and to generate an asset that could be handed down to his children.

Most believed that a key problem was that grants did not go far enough and should cover the full cost of any work. Farmers also felt that the 10 year commitment with the Countryside Stewardship Scheme was too binding. Concern was also expressed that there was no facility under the schemes for dealing with hedgerow problems such as rabbits and elder. There was a feeling that the whole application process was too lengthy and complex. One farmer gave an example of how the time lag with the decision about whether or not he could have the grant, had resulted in it being too late for him to actually carry out the planting.

Farmers required flexibility to fit conservation in with managing their farm as they thought fit. However, failing to obtain conservation grants appeared to have a very negative impact on farmers [NR:7 1 2 6 and 18 7 17]. Those farmers who had been refused grants believed that refusal was a result of already doing much

¹ People chipped in with comments on the thoughts of others within the group.

conservation work on their farms. They felt angry that their 'unpaid' efforts were undervalued and expressed a feeling of 'why should I bother'.

One of the key concerns of all the farmers was the amount of paperwork they had to do which took them away from the practical farm work. Complex grant application forms were viewed with exasperation:

T: There's not a footpath there now

Lu: There's only a ditch there now so he's going to plant a hedge and then have a footpath going all the way alongside it. But its not that simple, we thought it was, but R.....said, well my first visit is free and after that he has to pay and then all these other little things start coming in, and you think ah well and there's forms, endless forms, it's rather off putting. [Norfolk discussion group: 639-644]

The Countryside Stewardship Scheme was viewed as being too inflexible. Farmers felt the need to remain in control over what went on on their farms and were reluctant to sign control over how and when things were done to anyone else. Where farmers in this research wanted advice they wanted it on specific things rather than the whole farm. (This was also found in a study by the Centre for Rural Studies, 1990).

The Countryside Stewardship Scheme was also viewed as being too restrictive and some felt that there were some conservation measures, which they would not have been able to undertake under CSS. This particularly applied to the farmers who were keen on experimenting for themselves with different forms of hedge management. For example, the farmer with the 40 year hedge restoration scheme would not have been permitted to have managed his hedgerows in this fashion under CSS, yet it provided a diversity of hedgerows on his farm.

There was some criticism of the scheme since it was taken over by MAFF. Under the Countryside Commission it was felt that the administrators had been more flexible and willing to listen to the views of the farmers, whereas now implementation was felt to be too rigid and MAFF was unconcerned about the needs of the farmer.

Yet it's a 5 year agreement for the hedgerow restoration system, and they said put lots down every year, because if you don't do it we'll just re-do your agreement and send it back. And then MAFF took over and there was a letter saying, unless you do all this work, this 1000m coppicing..... It was done for one year, but the next year we got very little done and the idea was that we'd do as much as we could in year 4 and then you're under pressure, that if you don't do it then they're not going

to pay you and then you've got to bow and scrape. But when it was the Countryside Commission if you didn't get it done you'd ring them up and they'd say, oh don't worry, have you done half of it? Well what have you done? And you say, I've done hedge 1 and 2 but didn't get to 3 because it snowed or rained, and they'd say - oh yes it was ever so wet in February. [CF3:162-172]

But one thing about the Countryside Stewardship, I don't know whether you want to know this, but what I don't like about it is its very dictatorial. You have to go in for 5 years. We like conservation and do it. But I like to be able to do it when I want to do it and how I want to do it. [CF6:65-67]

Farmers considered that hard and fast rules were inappropriate when dealing with the natural environment. They felt that there was a need to be flexible in the timing of hedge trimming and management practices.

There was a general feeling, particularly among the Cambridgeshire farmers, that smaller local schemes such as those provided by the local Council, which focused on local needs were a preferred option. They felt unwilling or unable to commit themselves to something on a larger scale.

M: And grants?

F: Grants we've had help from the local authority.

M: Not Countryside Stewardship?

F: No haven't needed to, we have more flexibility working with the local authority dealing with local issues rather than having a large scheme being forced upon us by bureaucrats who have no sympathy or understanding for what's going on.

[CF2:35-40]

There was also concern expressed from the Norfolk discussion group over farmers with small farms. Such farmers were considered particularly important in an area where whole farms could consist of one field as they were more inclined to maintain small hedged fields.

Landscape changes under grant schemes as encouraging

Some farmers had noticed a change in their farm under the grant schemes. Such changes were a source of pride and provided evidence for the effort they were putting in. Being able to see that they were making a difference appeared to capture the farmers' imagination, provide encouragement and fuel enthusiasm. Some of the farmers also felt that they were unsure what affect they were having

and felt that ways of identifying for themselves what they had achieved would be useful.

6.3 WHERE THE FARMERS PLACE THE BOUNDARY TO THEIR SYSTEM OF INTEREST

The data suggests that the relationships that farmers have with hedgerows in their landscape context was different from that in their farming context. The need to balance their role as a business person and as a custodian and steward of the countryside was evident in both the wider and in-depth perspective. Although, this small sample may not necessarily represent the general picture, the evidence provided by the interview data supports farmers claims that they do care, but that running a business has to be a priority - their emotional feelings are dominated by what they consider to be rational farm management. Beedell and Rehman (1996a) have commented on the way that a favourable attitude to conservation may not be reflected in practice. This is not surprising considering the way farmers have to balance the rational with the emotional, with their farm as a business and as a place for wildlife or attractive views. As commented on by Battershall and Gilg (1996a), it is attitudes and values at the individual level that count as the complex origins of wildlife conservation and environmentally friendly farming make it difficult to generalise about farmer behaviour. However, taking a more holistic view presents farmers as not only managers of a business, but also as human beings with emotional responses.

Farmers were generally found to appreciate their hedgerows and all possessed feelings of pride, even those without many, or with those experts would consider poorly managed. This was particularly evident when they showed me round their farms. A sense of pride often appeared to be a result of relationships with local advisors, FWAG or the council, or from professional enthusiasts from organisations such as the RSPB or Game Conservancy.

Emotional attachments to the farm or the local landscape appeared to be significant factors in the attitudes of the farmers. Many of the farmers visited for the interviews had favourite parts of their farms, a particular hedge or view, for example from the farmhouse. These areas were associated with an emotional attachment which meant that they were not managed for profit like the rest of the

farm. For two of the farmers interviewed, this feeling of attachment had come from a family history on that particular farm [NR:18 14 3]. For the tenant farmers the emotional attachment appeared to be the result of a wider emotional attachment to the countryside which appears to have been fostered in their childhood. Such feelings of attachment appear to provoke a stewardship response, with conservation and grant aid being viewed as a way of restoring the countryside or landscape to how it 'should' be.

The keen interest by some farmers in experimenting demonstrates the willingness of farmers to participate in the learning process. Evidence of changing attitudes from the academic studies and the farmers themselves, suggests that farmers are open to change provided. Having an economic view of farming did not necessarily result in a lack of interest or care of hedgerows. This was also found in a study of farmers in the USA (Erickson and De Young 1992-3). The evidence presented here suggests that new ways forward could be found if changes are gradual and include trusting, local, relationships. Recognition for doing something that was beneficial to the wider society was felt by many farmers to be an important motivator and this did not necessarily need to take the form of financial help.

However, grants were perceived as essential to compensate and assist with hedge management and the evidence suggested that small scale local grant schemes were what farmers preferred. In their response to the consultation document the Shropshire Hedge Group commented:

“Our experiences are that one off payments work well for hedgerows and are an effective first step on the conservation ladder. Without these grants it is a very large step for many farmers to go straight to CSS”

This was also the view of the farmers interviewed and is supported by the wider perspective.

That farmers considered themselves as caring and that hedgerows played an important role as an outward sign of that care, was demonstrated across the data. They were found to be very conscious of their public image. However, although they were particularly sensitive to management activities indicating care to other farmers, they did not appear to have considered what may be indications of care to members of the public.

In terms of the overall farming operations, hedge management is only a small part and is therefore generally given a relatively low priority by farmers. However, the

farmers generally appeared to welcome interest in what they were doing. This was demonstrated by their willingness to spend often quite considerable amounts of their valuable working time talking to me and by the length of time several of them spent showing me round their farms. Like the public category, they also felt that their voice often went unheard and were pleased someone was showing an interest.

This chapter has demonstrated the complexity of the farmers relationship with hedgerows. However, what emerges is an indication that farmers appear generally willing to change and adapt, but that consideration of their perspective is essential if efforts in hedgerow conservation are to be successful. The key categories from the farmers' data were pride, trust, and recognition. These represented the higher level categories (or concepts) within NUD*IST's hierarchical data structure. The evidence from these categories indicates that a complex combination of factors needs to be brought together to foster pride, establish trust and to give the farmers a degree of ownership over any process of change. While farmers possessed a rational or business view of hedgerows it was not the case that farmers did not care for hedgerows, rather that for some farmers, they did not fit in easily with their perception of the farm 'as a business'. Like the public category, the farmers also possessed an emotional side to their relationship with hedgerows.

In the next Chapter I examine the experts' relationship with hedgerows before drawing the different categories' perspectives together.

CHAPTER 7

THE EXPERTS' PERSPECTIVE

This chapter examines the experts' relationship with hedgerows. The experts represent a diverse group ranging from researchers, planners and policy makers to those on the ground giving advice, and this is reflected throughout the chapter. Their common attribute is that they are all engaged in working with hedgerows in a professional capacity. The relationships that people had with hedgerows within this group were very much dependent on the person's particular interest, for example, whether they were an ecologist, historian or wildlife conservationist. As mentioned earlier, much of the expert view is drawn from the large amount of literature available on hedgerows and in particular the discourse surrounding the hedgerow legislation which has been essentially a discourse among this category. In the first section the wider perspective is presented with views being taken from the secondary data, such as views from the hedgerow legislation discourse, and academic literature. The second section examines the in-depth perspective with views taken from the primary data.

7.1 A WIDER PERSPECTIVE

7.1.1. Hedgerow plants

Between five and six hundred plant species have been found in hedgerows (Pollard et al., 1974), the most common being hawthorns (*Crataegus monogyna* and *C. laevigata*). However, there appears to be no species known to be limited to hedgerows, all hedgerow species may also be found in grassland or woodland habitats (Barr et al., 1995). Thus although they may be rich in a diversity of wildlife, hedgerows do not appear to be essential for any species of wildlife. Nevertheless, Hooper (1992) suggests that the removal of hedgerows would seriously affect the floristic diversity of lowland Britain, particularly in areas where there is little

remaining woodland. Currently the quality of vegetation in hedgerow habitats is believed to be in decline, in both pasture dominated areas and in arable field boundaries, where weed species typical of intensively managed grassland are replacing woodland and meadow species (Barr et. al., 1995).

7.1.2 Hedgerows as wildlife habitats

The importance of hedgerows for wildlife has been well documented (Way and Greig-Smith, 1987; Watt and Buckley, 1994; Cummins, French, Bunce, Howard and Barr, 1992; Boatman, 1994; Barr, Britt, and Sparks, 1995; Marshall and Moonen, 1998). The earliest papers on hedgerows were published in the 1800s (for example, Cambridge, 1845) and promoted hedgerow removal. At this time it appears that it was felt that hedgerows were too large and that there were too many of them. It was not until the mid 1960s that researchers turned their attention to the importance of hedgerows for wildlife. Before this time most published papers were on agricultural rather than the wildlife aspects of hedgerows. Now most publications focus on their ecological importance.

Hedgerows have been found to provide a diversity of habitats for wildlife and as such are considered by experts to be important 'wildlife' areas in an otherwise hostile environment. As commented on by one expert:

“ I think, from a fauna point of view, yard for yard, hedgerows probably are the most important habitat in the countryside, particularly on farmland, (Dr. Tapper, of The Game Conservancy Trust, House of Commons, 1998a)”.

Structure, aspect, age and management are all factors that affect the diversity of wildlife and provide an important habitat for reservoirs of species that may colonise adjacent land (see for example, Burel and Baudry, 1995).

7.1.2.1 Hedgerows as habitats for birds

Hedgerows and hedgerow trees are important bird habitats, they provide nesting sites, song perches, roosts, shelter, food and facilitate movement (Pollard et al., 1974; Barr et al., 1995). The extent to which birds are dependent on hedgerows, however, is not well researched and will vary between species and at different times of the year. Blackbirds, tits, wrens and woodpigeons have been found to use hedgerows only when their preferred woodland or scrub habitat is full (Hooper, 1992). Nevertheless, in the absence of woodland, the majority of birds on farmland

appear to be dependent on the field boundary and hedgerow habitats for their survival (Parish, Lakhani and Sparks, 1995). Hedges are also the main nesting habitat for ground nesting birds such as grey and red legged partridges (Dover, 1991; Hooper, 1992).

The Game Conservancy Trust have also carried out much research on the importance of hedgerows for game birds and have been instrumental in raising awareness of the value of hedgerows generally (for example, Sotherton and Rands, 1987; Boatman and Wilson, 1988). Evidence from the Game Conservancy Trust also suggests that game has an influential impact on farmers and conservation, providing local species richness and a restraint on hedge removal (Cox, Watkins and Winter, 1996).

7.1.2.2 Hedgerows as habitats for small mammals

Hedgerows are recognised as important habitats for small mammals, although different species will use them in different ways. Few species are regarded as being totally dependent on hedgerows in the absence of woodland (Hooper, 1992). Shrews and voles use hedgerows as permanent habitats, although they move into the fields to forage, while harvest mice are only dependent on hedgerows as winter refuges and woodmice, although not dependent on them do exploit them (Tew, 1994). Tew suggests that it is unlikely that small mammal predators, such as the weasel, would survive on farmland without hedgerows. Hedgerows also provide habitat for hedgehogs whose numbers are found to be most abundant close to woodland, scrub or hedgerows and who use the hedgerow for nesting in summer and hibernating in winter (Packer, 1995). Although there is little published work, hedgerows also appear to provide important habitats for other vertebrates such as snakes, frogs, lizards, slow worms and toads (Pollard, et al. 1974; Dowdeswell, 1987).

7.1.2.3 Hedgerows as insect habitats

Hedgerows have also been found to support large communities of insects. Overwintering densities of insects in hedgerows can exceed 1000 insects per square metre (Menneer, 1994). Of the 54 species of butterfly found in Britain, 23 species have been found to breed in hedgerows (Corbett, 1995).

7.1.3 Hedgerows as connecting, linear landscape habitats

Linear features such as hedgerows may form connections between woodland habitats across an often ecologically hostile landscape. The importance of hedgerows at the landscape scale has been identified by Burel and Baudry (1995) who believe that hedgerow diversity can only be understood as resulting from landscape scale processes. They argue that “hedgerows cannot be considered as isolated landscape elements”. Barr et. al., (1995) also point out that component parts of the hedgerow system should not be considered in isolation. Decreasing connectivity in the landscape, particularly in agricultural landscapes where habitats become isolated ‘islands’ for wildlife, is of particular concern to members of the expert category (see for example, Spellerberg and Gaywood, 1993).

Hedgerows may be important for certain species as links between habitats (Burel, 1989; Bunce, 1992; Spellerberg and Gaywood, 1993; Tew, 1994, Kirby, 1995; Burel and Baudry, 1995a). The ecological diversity of a hedge will depend on its position in the landscape (Cumins et al., 1992; Barr et al., 1995; Forman and Godron, 1986; Burel and Baudry, 1995). For example, how close the hedge is to other habitats, such as woodlands, or how well connected a hedge is within a network of hedgerows. They are thus considered particularly important where there is little remaining woodland, providing not only viable habitats, but a means for movement of species able to do so. Different types of structures will either allow or inhibit movement of animal and plant species through the landscape (Baudry, 1989, Kirby, 1995). Hedgerow intersections are also important as they may contain greater species diversity than the rest of the hedge (Forman and Godron, 1986). Although much debate surrounds the subject of wildlife corridors, there is sufficient evidence to suggest that habitat fragmentation is a cause of species decline and that further fragmentation should therefore be prevented (Barret and Peles, 1994; Forman, 1995a; Kirby, 1995). The importance of hedgerow species diversity and the length of linear features (walls and hedgerows) has also been recognised by the Government, and are being used as Sustainable Development Indicators (Department of the Environment, 1996) and play a role in the UK Biodiversity Action Plan (HMSO, 1994).

7.1.4 Hedgerows as functional

Experts perceive hedgerows as having several functions. Hedgerows are commonly perceived by experts to have a value to stock farmers and much has been written on the shelter effects of hedgerows (for example, Oke, 1978; Brandle and Hintz, 1988). However, there is also evidence which suggests that shelter provision is not generally economically beneficial except in a minority of cases (Pollard et. al., 1974; Hooper, 1992). Few hedges are actually stockproof and thus many are also fenced (Barr et. al., 1995). Nevertheless, Hooper (1992) found that farmers also viewed hedges as a visual barrier which they believed discouraged stock from breaking out. Although historically a source of income, hedgerow timber has not generally been viewed as providing an income for farmers. Their potential for providing timber is now being re-considered as a way of encouraging farmers to retain and manage hedgerows. However, Maclean, (1992) found that wood merchants were reluctant to accept hedgerow timber as it may contain pieces of barbed wire or fence staples.

Although considered an important function of hedgerows in other countries expert opinion in the UK differs as to the value of hedgerows for prevention of soil erosion. Work by Baudry (1989) in France has shown the value of hedgerows for controlling erosion caused by downhill water runoff. The prevention of soil erosion is, however, very complicated as many factors are involved and although evidence appears to suggest that hedgerows may help, for example, in the wind blown, sandy areas of East Anglia, it is uncertain as to what extent such benefits are generally applicable (Pollard et al., 1974; Hooper, 1992). Marshall and Moonen (1998) also comment on the way hedgerows can prevent fertiliser movement to non-crop habitats and reduce agrochemical drift into water courses.



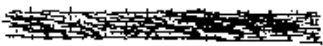











Although encouraging game is often quoted by experts as a main reason for keeping hedgerows on arable farms, there appears to be only a limited number of farms that use them for this purpose. For example, less than 10% of farmers in Hooper's (1992) survey valued hedgerows for game.

7.1.5 Hedgerows as managed for wildlife conservation

The variety of habitats that a hedgerow provides is dependent not only on its origin but the way that a hedgerow and the adjacent land is managed (Burel and Baudry, 1994; Barr, Britt and Sparks, 1995). Without management a hedge will revert to a

line of trees or shrubs. Figure 7.1 shows the different types of management style identified by studies carried out by the Institute of Terrestrial Ecology.

Figure 7.1 Hedge types produced by different management types as identified by the Institute of Terrestrial Ecology. (Adapted from Barr, Gillespie, and Howard, 1993)

| Management type | Side view | Cross section |
|--|--|---|
| Remnant |  |  |
| Laid |  |  |
| Mechanically pollarded |  |  |
| Clipped |  |  |
| Overgrown, undergrowth removed by heavy grazing pressure |  |  |
| Unclipped stockproof |  |  |
| Overgrown with outgrowths of blackthorn etc. |  |  |

The way that a hedge is managed will determine how valuable a hedge is for invertebrates, birds, mammals and the herb flora. For example, short hedges are associated with a greater diversity of ground flora, tall thick hedges have been found to generally support more bird species than short. Thus a heavily trimmed hedgerow is believed not to provide a suitable habitat for birds and a degree of lack of management or minimal management may be more appropriate if birds are to be encouraged. Different species of birds have also been found to require different types of habitat. For example woodland birds and songbirds have been found to be associated with tall hedges. So a diversity of structures is believed to be required to

maintain bird species diversity (Pollard, et al., 1974; Dowdeswell, 1987; Parish, Lakhani, and Sparks, 1995; Barr, Britt and Sparks, 1995). Although it will also affect the appearance of the landscape, this aspect has been of little concern to the expert category who have focussed on hedgerow management and wildlife conservation.

Although hedgerow management traditions vary regionally according to local traditions, for example, many of the low turf hedges of East Cornwall planted with thorn hedge on top are traditionally cut and laid (Menneer, 1994), a study by Barr, Britt and Sparks (1995), found that 90% of farms use flails for trimming. The time of year of trimming is considered by experts to be important. Summer trimming of hawthorn, is believed to produce a squat bushy hedge, while winter trimming produces a tall hedge (Barr et. al., 1995). Annual trimming of all hedgerows has been found to drastically reduce the species diversity of hedgerows (Menneer, 1994), and as fruit and berries are an important food source for wildlife, the timing of trimming can be crucial. Although the evidence of cutting effects on herbaceous flora of hedgerows is not clear, cutting using a flail twice a year has been found to severely reduce the numbers of butterflies and moths. However, regular cutting is not necessarily detrimental to invertebrate diversity (Barr et al., 1995).

It is often stated that an 'A' shaped hedge is of benefit to wildlife. However, this appears to be a matter of debate, as there appears to be no evidence of a particular hedge structure which favours all species (Barr et al., 1995; Clements and Tofts, 1992). Thus there is no single management option that can be applied to all hedges in order to maintain species diversity.

The adjacent land has also been noted to have an impact on a hedge (Barr et al., 1995, Spellerberg and Gaywood, 1995). A wide uncultivated boundary, such as a grass strip, which prevents cultivation or grazing close to the hedge can provide several benefits. It may protect the diversity of the hedgerow flora and insects which are often impoverished as a result of herbicide, pesticide and fertiliser drift (Boatman et al., 1994). It can help prevent annual weeds, such as cleavers and barren brome, from establishing in hedge bottoms and encourage beneficial insects to flourish (Barr et al, 1995; Dover, 1991). However, farmers are reported to be concerned about field margins encouraging weeds in their crops (Pollard et al., 1974; Carr, 1988; Hooper, 1992; Watt and Buckley, 1994) However, Barr et al., (1995) point out that this is questionable and is more likely to be a result of what they consider to be poor field margin management. Based on academic research,

experts have presented recommendations for farmers on how they should manage their hedgerows (see for example, Marshall and Moonen, 1998).

Hedgerows need not necessarily be managed, however. The hedgerows of North America, for example, are rarely managed except by casual wood cutting (Rackham, 1986). Further, not all management is necessarily appropriate, there is a risk of management for management's sake. For example, the tall beech windbreaks of Exmoor, and thick Dorset hedgerows are being inappropriately chopped down to the size of a Midland thorn hedge (Mabey, in Clifford and King, 1993).

7.1.6 Hedgerows as Ideal

Experts place importance on attempting to identify what they consider to be 'ideal' or 'key' hedgerows. From his studies Hooper (1992) has identified two types of hedge: a 'key' hedge, that has an intrinsic value, such as a parish boundary hedge, but which is not necessarily of importance to wildlife, and an 'ideal' hedge, which is managed in such a way as to maximise wildlife and landscape benefits. The idea of an ideal or key hedgerow is commented on by Cambridgeshire County Council (1993) in their information booklet on hedgerows. They consider key or ideal hedges to have particular historic, nature conservation and landscape value. However, in common with many members of the expert category, historic value relates to hedgerows which are very old, associated with an historical event or site of archaeological significance, and landscape value relates to the "framework of the land" or structure of the hedge. There is little indication in the academic literature as to what would be 'ideal' for ephemeral landscape values such as smells, colours or their contribution to sense of place.

The concept of 'ideal' hedges for wildlife is also present in the desire among experts for assessment criteria which may be used to judge the worth of a hedgerow, particularly in comparison with other hedgerows. Criteria for assessing the wildlife potential, and appropriate management options for hedgerows, have been developed by the Open University (Carr and Bell, 1991; Lane and Carr 1991), based on more complex ecological criteria devised by Ratcliffe (1977) for selecting Sites of Special Scientific Interest. Ecological criteria for evaluating hedgerows have also been devised by Clemments and Tofts (1992 and Tofts and Clemments, 1994).

More recently criteria for defining an important 'hedgerow' have been devised by ADAS for the 1997 Hedgerow Regulations (see Appendix 8). In their report on the Hedgerow Evaluation System (Department of the Environment, 1996b), ADAS acknowledged the importance of hedgerows for providing pattern, diversity and structure to the landscape. They also identified the importance of considering hedgerows in a landscape context and their importance to local distinctiveness. However, despite the apparent recognition of the importance of these landscape values, concerns over the subjectivity of criteria such as landscape aesthetics or character, led them to effectively exclude these values from the criteria by assuming them to be included within the ecological and historical criteria:

"While local distinctiveness of a hedgerow is important, this needs to be related to regional distinctiveness, so that only the important hedgerows are identified. This is best done by using the ecological criteria, which can be measured objectively" (ADAS: Department of the Environment, 1996b).

Although the expert category generally have placed great emphasis on the need for objective measurement and assessment of hedgerows, some differed from this view:

"The value for nature conservation, as well as landscape and cultural history is immeasurable." (Devon Wildlife Trust, CDR, 27.11.96).

7.1.7 Hedgerows as threatened habitats: protection of the special

The decline in the total length of hedgerows in England has been identified by the Institute of Terrestrial Ecology (ITE) which has carried out a series of surveys (1978, 1984, 1990 and 1993) on the British countryside and hedgerows. Following concern over this decline, hedgerow protection was implemented in the form of the Hedgerow Regulations (1997); see appendix 8 for details.

Within the experts that were consulted over the new regulations (Department of the Environment WO/MAFF, 1996), there was a general feeling that the new regulations were too complicated, difficult to apply and the coverage was insufficient. Many of those consulted groups had a preference for incentives rather than further legislation for hedgerows, particularly those who had regular contact with farmers. The National Trust, for example, pointed out that:

"....the Trust has never been convinced that legislation is necessarily the best way to achieve protection. Our experience with the Tree Preservation Orders has

shown the difficulty of attempting to protect living things by prohibiting their removal.” (House of Commons, 1998c).

Different sectors within the expert category emphasised different concerns according to their interests. For example, the wildlife groups expressed concern that the legislation would mean that farmers would be dissuaded from allowing ecological recording on their land, while the local authorities believed the criteria unworkable as local records were insufficient.

Much concern was expressed regarding the lack of a definition of hedgerows within the legislation and that ‘important’ hedgerows as defined by the criteria excluded many valuable hedgerows. There were a wide range of views on what should be included and excluded in the legislation. Common Ground (CDR, 3.12.96), for example, held the view that the criteria for an ‘important’ hedge should also include criteria relating to their functional value, such as prevention of drifting snow, pollution barriers, soil erosion. Generally, there were strong feelings that protection should also be given to other types of field boundary such as dry stone walls, and hedge banks, which do not necessarily contain woody species, (House of Commons, 1998a,b,c). It was also generally felt that the regulations favoured those areas of England and Wales where there are ancient hedgerows. The Shropshire Hedge Group, for example, expressed concern that the legislation would produce a “two-tier landscape”(CDR, 19.11.96). While old hedgerows are assumed to be important, Inclosure (or enclosure¹) hedgerows are not generally covered in the regulations. Yet it has been suggested (House of Commons, 1998) that Inclosure hedgerows may be historically the most significant as they represented an approach to land management that was copied throughout Europe. However, many of the regional members of the expert category felt that all hedgerows were important. This was particularly apparent among those who were not ecologists or who were involved in issues other than wildlife conservation. For example, Bedfordshire County Councils response to the consultation document stated:

“all hedgerows are important and should be treated as such”.

They go on to say that the Government

“should encourage planting and maintenance of hedges anywhere, not just in the countryside.”

¹ The Government Acts use inclosure rather than enclosure.

The Wildlife Trusts also pointed out that hedges bordering many roads, river banks, canals and railways are not protected, yet their amenity value to the public, and wildlife, is high. Protection of the 'ordinary' hedgerows, i.e. those that many members of the expert category do not consider ecologically or historically important, was also commented on by several members of this category:

"The fact that we cannot prove the existence of the hedgerows in the 16th century does not lessen their importance to us". (Mill Hill Preservation Society, CDR, 30.11.96).

However, protection of the ordinary was still often considered in terms of wildlife protection:

"In many cases it is the ordinariness of hedgerows that is so valuable, providing refuges for once common species." (G. Murray, WWF UK CDR, 3.12.96).

There was also concern among the expert category over loss of hedgerows as a result of urban developments. Both the National Hedge Laying Society and The Council for British Archaeology expressed their concern that urban developers were able to remove hedgerows freely. Dr. N. Bannister pointed out in her personal response to the regulations consultation document:

"In rural areas villages and farms can contain garden hedges which were once Saxon boundaries, medieval manorial or settlement boundaries dividing the settlement from the cultivated land." (CDR, Oct.'96).

In the evidence provided to the Select Committee on Environment, Transport and Regional Affairs (House of Commons, 1998) all the major professional bodies were concerned with the need to review financial incentives. They generally felt that hedge loss through neglect was a major concern and that the legislation could not cover this type of loss. More financial assistance for management was therefore required. It was generally felt that some form of cross-compliance (see, for example, Baldock and Mitchell, 1995) was required, where farmers would be obliged to manage their hedgerows sensitively in return for grants. For example, Mr Jones speaking for the Wildlife Trusts stated :

"..I believethat if you are in receipt of public funds for a particular action then that brings responsibilities on you.." (Q86. House of Commons, 1998a).

Although this was not the view of the Minister, the National Farmers Union or the Country Landowners Association (House of Commons, 1998a and 1998c) the Select Committee also reached this conclusion (House of Commons, 1998). The

National Farmers Union and National Trust felt cross-compliance initiatives for hedgerows would be unfair to those farmers who had kept their field boundaries and that it would result in the continuation of aid to farmers (House of Commons, 1998a and c). Other categories felt that cross-compliance could be constructed such that farmers with more hedgerows than others would not be unfairly disadvantaged.

7.1.7.1 Hedgerows as requiring grant aid

Although there have been a number of financial incentives for the protection of hedgerows, the Countryside Stewardship Scheme (MAFF, 1996), is the main scheme under which hedgerows in the 'wider' countryside, i.e. those which most people value and have regular access to, have a degree of protection (see Appendix 7). However, its impact is seen as limited. As stated by English Nature:

"Certainly the Ministry are doing a lot through Countryside Stewardship agreements and through ESA agreements. However, they are still only touching the surface of the problem." (House of Commons, 1998).

Investment in conservation in this country has a history of being piece-meal and carried out on voluntary basis (O'Riordan, Wood, and Shadrake, 1993). Schemes such as the Countryside Stewardship Scheme and the Environmentally Sensitive Areas Scheme (see appendix 7) have been criticised by O'Riordan et al. because they do not consider management of the whole landscape. Such schemes are farmer centred and voluntary, the farmer is paid to meet certain conservation objectives and the schemes therefore rely on the co-operation of the farmer.

As the expert category tends to be dominated by those with an interest in wildlife, the main purpose of the existing grant schemes is to improve biodiversity in the landscape. For example, in their evidence to the Select Committee English Nature stated:-

"English Nature sees these schemes as tools for the implementation of the Biodiversity Action Plan Targets for habitats and species" (House of Commons, 1998b).

Grants have been found to be an effective tool for encouraging farmers to adopt conservation measures. A market research survey carried out for the Hedgerow Incentive Scheme indicated that among farmers and other owners of hedgerows, interest in hedgerow restoration was high and that relatively low payments would

serve as inducements for action (Whelon, 1994). However, American studies suggest that monetary rewards have a limited and transient effect on the promotion of countryside conservation (Erickson and De Young, 1993).

7.1.8 Hedgerows as visually important

A variety of factors may affect the visual appearance of a hedgerow. For example, legal responsibilities (roadside hedges must be regularly trimmed); local traditions; the function of the hedge; the economics of the farm; the interests of the farmer (for example, in game or conservation); activities of local conservation groups; participation in conservation schemes; the farmers' preferences for management techniques or styles. However, the visual aspects of hedgerows has not been well studied.

Landscape surveys indicate that trees and hedgerows contribute significantly to the visual appearance of the landscape, particularly because of their vertical structure (Hooper, 1992), diversity of structure and diversity of field and network patterns (Burel and Baudry, 1994). Using a questionnaire survey on farmers and the public Hooper also found that in grassland areas hedgerows were recorded as being diverse and interesting whereas in arable areas where there were lower and fewer hedgerows they made a weak contribution to the visual appearance of the landscape. Parsons (1995) has also commented on the potential health and stress reducing effects of human interactions with the 'natural' environment. Views of nature from peoples windows were found to be particularly important.

Despite the experts' tendency to focus on the ecological value of hedgerows within the hedgerow legislation discourse there were also comments on the way they contribute to the landscape visually:

“Where countryside is visible over a large area and the hedgerows have gone, it is often very difficult to ‘read’ the landscape visually.”(J. Poppin, a Planning and Environmental Consultant, CDR, 4.12.96)

7.1.9 Hedgerows as part the English cultural landscape

Hedgerows as part of the English culture is of particular importance to certain bodies such as the Countryside Commission, Council for the Protection of Rural England (CPRE) and Common Ground. CPRE for example, considered the main reason why hedgerows were valued lay with their cultural and landscape values:

“CPRE believes that the landscape and cultural importance of field boundaries lies at the heart of why people value them so highly”. (House of Commons, 1998c).

The importance of hedgerows to English culture has also been noted in the House of Commons:

“The House will probably agree that, through the generations, the English landscape has brought pleasure and inspiration to many thousands of people. Our literature and our art have benefited from it and the quality of life of many millions of people has been enhanced. The hedgerow is an important part of that landscape...” (Mr. Peter Hardy (Wentworth), House of Commons, Hansard: 20 March 1997).

Hedgerows have been commented on by experts for their contribution to sense of place:

“ Without boundaries there would be no fields, no field and related place names and no distinct patchwork landscapes that are so integral to the character of the English Countryside. Field boundaries are the skeleton upon which the field patterns of the English countryside are built. Like the pages of a book, field boundaries also tell us about the history of a place and its people. They show us how the land was divided and managed in the past, demarcate historic public rights of way and protect archaeological monuments.....The importance of field boundaries lies in the fact that they are integral to landscape character and local identity. ” (Common Ground, House of Commons, 1998c).

to the ‘patchwork’ of the landscape:

“A defining attribute of “patchwork quilt” rural landscapes; the stitching which holds the fabric of the countryside together.” (Countryside Commission, House of Commons, 1998c).

and the way that they are part of our heritage and history:

“they embody our written history...The pattern of the English and Welsh landscapes owes so much to these ‘sportive woods, run wild”. (Common Ground, CDR: 3.12.96).

Feelings of intimacy and the importance of protecting hedgerows for their contribution to the landscape in this way has also been noted:

“Hedges enable the eye to detect rises and falls in the landscape, to discern ‘form’. They give it ‘perspective’ in a way that no other feature does. They can give an area a feeling of enclosure and security. Where hedges perform these important functions, especially where few are left, they should be capable of protection for

these reasons alone.” (J. Poppin, a Planning and Environmental Consultant, CDR, 4.12.96).

However, these aspects were not generally the focus of most experts attention and this has led to frustration among some members of this category, particularly concerning the way members of this category have been overly concerned with historical and ecological aspects of hedgerows:

“Why is there so much concern regarding hedgerow removal? It is surely not simply a case of academic consideration of historical and ecological importance of hedges. Hedgerows are individual features and as components of our lowland English Landscapes are an integral and often intimate part of our national heritage. The patchwork of hedgerows reflecting usually centuries of environmental, economic and social interactions have resulted in a heritage unique to England.” (J. Sanderson, Barnsley Metropolitan Borough Council, CDR, 29.11.96).

7.2 AN IN-DEPTH PERSPECTIVE

This section examines the main categories which arose from the taped interview data and participant observation of three hedgerow events. The experts interviewed were mainly employed in occupations concerned with wildlife conservation or advice. Thus the interests of most of the experts lay with the wildlife and, to a lesser extent, with the historical value of hedgerows. As with the farmers, the sample size was small, so it was not possible to provide much comment on differences between study areas. However, where there is an obvious difference this is mentioned.

7.2.1 Hedgerows as features of the English landscape

Like the public and farmers, experts also experienced the ephemeral aspects of landscape:

Landscapes make me feel good to be alive, a feeling of well-being, especially on a sunny day. Want to go out and mingle with it - always think of sun when thinking of landscapes, probably as I am always out for visits to the country on sunny days I associate it with the sun. [BPROF4:24-28]

Hedgerows as landscape features held significance for the respondents as wildlife corridors, however, they were also felt to contribute to the landscape in a similar way to that felt by the public category:

They link features and perspective, soften landscapes and encourage the development of finer detail, e.g. along the field edges and of course the landscape components in the hedge. [BPROF1:25-28]

That experts held both a rational or professional and a personal or subjective view was evident from the way some of them answered the questions, for example:

M: What does the term 'landscape' mean to you?

P: I Guess there's two answers to that. From a professional point of view. The landscape would be some of the features that in any one part of the countryside, that characterise that bit of countryside whether it be chalk downland or, lowland heath or river valley or flood plains something like that. Now I guess more from a personal point of view I think one tends to think in terms of landscape as places of views or something that one might look out upon from a vantage point.

M: How do landscapes make you feel?

P: I guess from a personal point of view, different landscapes make me feel in different ways, in that I personally prefer landscapes with lots of sky in them whether it be moorland or coastal areas, but I also appreciate the more enclosed perhaps heavily wooded valleys or small fields. [BPROF5:18-30]

Although the experts interviewed appreciated hedgerows in their landscape context, their appreciation of them was very much coloured by their expertise. When asked what they like to see, references tended to be made to management or their ecological value:

M: What do you like to see if you travel to somewhere else in the countryside?

P: I suppose, answering that with regard to hedges its quite interesting to see the different patterns of management, both in terms of the trimming and the size of hedges and the shape of hedges, but also in the style of perhaps hedge laying as well. [BPROF5:89-90]

Diversity in the landscape was particularly important for this category, although, diversity generally referred to biodiversity. Diversity in management techniques was also considered important.

7.2.1.1 Hedgerows as providing intimacy

Hedgerows were described as providing intimacy and privacy, with large bushy hedgerows providing a strong visual presence.

Big untrimmed hedges- more wildlife and irregular features, give landscape a more intimate feel. [BPROF1:62-63]

Give it definition, give it detail - make it English. The most important component in the landscape, defines fields and whole shape - I like to see landscape with lots of them I find that intimate.I like them big and bushy, not short and neat, they don't have so much presence. They make you feel intimate when you are close up to them, like walking through woodland, same kind of feeling, when walking next to a big hedge. [BPROF4:30-31, 65-67].

7.2.1.2 Hedgerows as providing a sense of mystery

There was also evidence from this category that hedgerows provided a sense of mystery:

Loss tends to simplify the environment and sense of place and contribute to a more boring world with less sense of mystery. [BPROF1: 50-51]

This was a particularly strong category within this category.

7.2.1.3 Hedgerows as part of childhood memories

Childhood memories of the countryside and hedgerows were also evident within the expert respondents. In particular, there was evidence of the way that childhood experiences had been influential in the way they felt about the countryside as adults:

I feel my views concerning hedgerows are influenced by my childhood memories, My grandparents were ramblers and took us out walking. BPROF4:127-128]

Although there were fewer childhood memories concerning hedgerows in the expert responses, fewer people were interviewed from this category compared to the other categories.

7.2.2 Hedgerows as wildlife habitats

For the wildlife conservation experts the countryside was primarily viewed as a place for wildlife and farming. For example, one professional commented:

But I still think it is basically a resource for production and a home for wild animals and then an enjoyment for people. I think that is the way it should be. [BPROF5:25-26]

Hedgerow purpose was generally viewed in terms of providing biodiversity and connectivity in the landscape. Those hedgerows with ecological significance tended to be valued more highly than other values.

Where history was considered, it generally centred around ancient hedgerows which were of interest because of their species richness. There was evidence of frustration among other local experts on the emphasis on the ecological aspects of hedgerows. One local historian [Nene seminar: 63-79], for example, was concerned for enclosure hedgerows in particular, which he felt provided a record of human activity. Preservation, rather than conservation, of these historic landscapes was therefore felt necessary.

The expert respondents all felt very strongly that hedgerows and wildlife conservation was not of high priority for most farmers. Nevertheless, they also expressed understanding of the need for farmers to run a business and were generally sympathetic to the way that hedge management involved costs in time and money to the farmer.

7.2.3 Hedgerows as managed landscape features

Those respondents working with farmers considered the effects of hedgerow management on the landscape, but this was generally related to their benefits to wildlife, with an emphasis on field size:

I think we've got to the situation now where most farmers will tell you now that about 30-40 acres at the most is big enough, as you know over at Haversham there they were 100-200 acres, and in actual fact in one of those farms there he's wanted to plant woodland and hedges again. [BPROF4:260-263]

Experts were encouraging farmers to manage hedgerows to improve connectivity and habitats within the agricultural landscape. In the Cambridgeshire area removal of hedgerows was not felt to be an issue because there are so few left and in the Buckinghamshire study area it was felt that some farmers were actually decreasing their average field sizes. Both Buckinghamshire and Cambridgeshire experts' preference was for taller, more diverse and bushy hedgerows than many of the farmers possessed. However the Cambridgeshire experts particularly disliked to see small sized hedgerows amidst the large arable fields of that part of the country.

The little thin hedges cut low and precisely between huge arable fields. They are such sad reminders of what hedges used to be that perhaps it were better that they went altogether. [CPROF1: 58-61]

The experts considered traditional hedge management as being better for wildlife. Although there was some expert concern expressed that traditional skills were being lost, one advisor felt that young farmers not being brought up with the tradition of managing their hedgerows was a more important factor than lack of skills.

However, advisors differed in emphasis on what was viewed as the most important piece of advice that farmers could be given. For example, one advisor felt that the main thing he would suggest to farmers was to protect hedgerows from browsing animals and cultivation to help the hedgerows to restore themselves naturally, while another felt that preventing annual trimming was of key importance. The need for a whole landscape approach was generally felt to be important and that farmers needed to appreciate why the hedge conservation work should be carried out for it to be successful.

Unlike the farmers the experts were particularly keen that only native tree species should be planted in hedgerows and expressed concern over examples of planting of non-native species in hedgerows.

What's tended to happen now, the parish councils are tending to shove anything in. when I was doing the hedgerow survey you knew when you were getting near a village because you suddenly come into laburnums and horse chestnuts. Over where I live, in my village, there's rows of horse chestnut, laburnum, everything. And some things tend to spread. [BPROF6: 393-397]

7.2.4 Conservation as uncool

Like the farmers, there is evidence from this category that conservation had an image problem. This was indicated by the experience of one advisor who expressed concern about the way that another conservation advisor had been deliberately embarrassed by farmers at a local event:

Yes, but there's no doubt about it, with the best will in the world, that you can get on with a lot of farmers. But you do meet some that you'd just like to jump on. I mean N... has been to a couple of events where there's been some large landowners there and they make a point of trying to embarrass her with the environment, but

you know, make a point of how they are anti-environment, and its a bit sad really.
But then maybe farmers never have been that environmental. [BPROF 6: 634-638]

This advisor also noted how farmers felt that they worked harder than other people, particularly conservationists, and that conservation was not regarded as 'real' work. Advisors commented that they believed that farmers felt they had little public respect and that this accounted for their attitudes towards non-farmers. [BPROF 5].

Although farmers felt that the younger generation had learned from past mistakes and that they had a different attitude towards conservation, this was not the view expressed by the advisors, who felt that the younger generation coming through were more likely to be antagonistic towards environmental friendly farming:

M: And the younger generation?

A: They're worse than the dads.

[BPROF6:714-723]

7.2.5 Hedgerows as a sign of care

Rather than hedgerow management being a sign of lack of care for the environment, in general, for this category it was a sign that farmers did not care for their hedgerows properly. They were particularly concerned about neglected and overly managed and flailed hedgerows. They also expressed concern over gappy hedgerows, although it was felt that in some landscape areas these were characteristic of that area.

Generally, trimming was a cause of frustration for experts. For those providing advice to farmers there was concern that despite their best efforts, and although their advice was listened to, it was not always taken. In particular, there was concern over farmers' desire for neat and tidy hedgerows, which resulted in annual trimming, often at what they considered was an inappropriate time of year. They also felt that farmers were generally not providing generous field margins.

One advisor also expressed concern over the way contractors dealt with hedge work. He reported that contractors were not using modern machinery to its best advantage.

There's two things with hedge trimmers. They've got different type flails for different type jobs. Ones that cut the verge you've got a different flail to those that cut the hedge. Most contractors just use the same one. And you need to keep sharpening them, which does a better job but also makes sure they don't vibrate and they don't

do that. And also now you can find a bit that goes on the bottom that blows all the hedge trimmings back into the kerb, but they won't put it on, these guys.

[BPROF6:476-483]

Previously a farmer himself, he believed that annual trimming had more to do with habit than necessity and that contractors actively encouraged farmers to have their hedgerows cut at inappropriate times of the year. He also pointed out that modern machinery now enabled farmers and contractors to cut hedges without going on the field thereby allowing trimming at what would otherwise be an awkward time.

It costs them, they ruin roads with all the hedge trimmings on the road and the rest of it they make a mess of the fields and it doesn't need doing. But to do it in July after you've got a crop off the field I find it's totally illogical for two reasons, apart from wiping out the invertebrates and the habitat for birds and that it grows back before the autumn so they've got to do it again. And the only logic I can see is that I was told by a hedge contractor, is that from July onwards that is their main time when they need the work, so they badger farmers. [BPROF6: 420-421]

7.2.6 Hedgerows as needing protection

The expert respondents expressed concern over how few hedgerows would actually be protected under the new hedgerow regulations and that existing protection was not strong enough. Many also felt that legislation was not the only course of action:

Long overdue. I am extremely concerned it's not strong enough, there should be stronger incentives, subsidies should be tied to looking after features of country like hedgerows. [BPROF4:85-92]

They were generally concerned about the cost and practical implications of implementing the Hedgerow Regulations. One advisor [BPROF6], also expressed concern over the way they were being implemented locally. It was felt that hedgerows were not being treated as seriously as other issues, such as new building applications. Farmers were reported to have got away with taking out hedgerows when they should not have and it was felt that there was a lack of will to prosecute. However, concern was also expressed that anyone wishing to take out a hedge was finding it difficult to get access to the appropriate person for advice.

.....and their manager phoned up and, to give an example, it took him ages to get hold of any one to talk to about hedges. It's a classic, you go

down to the reception of somewhere like the council and they pass them round to everywhere. [BPROF6: 339-342]

The respondents also had mixed feelings about giving grants. All the experts agreed that the Countryside Stewardship Scheme was worthwhile, although some frustration was expressed by the limited funds available and the need for farmers to make a 10 year commitment. Although Countryside Stewardship was viewed as having a lot of future potential, concern was also expressed about how sustainable grants could be in the long term.

In terms of again, how do I feel about those grants, then there is the question of sustainability, in that if one is always giving out grants to manage hedges, one has to ask the question - is that sustainable? In that I would never want farmers or the general public to rely on grants long term to have the landscape managed. [BPROF5: 99-100]

That the grants did not necessarily cover the full cost of the work was recognised as a difficulty. It was also recognised that farmers were overburdened with paperwork and that the application forms were getting overcomplicated, such that farmers felt no longer able to complete them themselves. Although advisers were available to complete the forms for them, this service usually had to be paid for, thus reducing accessibility to the grants.

Concern was also expressed about the way that grant money tended to be targeted at only what was viewed as the special sites and high profile town sites at the expense of the wider countryside.

We've got a problem as well, if you create these sites that cost a lot of money to run in the future they are drawing money away from all the other management. And that's what I missed out saying on footpaths with public access. Every time you create a footpath its got to be maintained, every time you create a circular walk or a new high profile one it pulls money out of countryside management and this is what's happening now. All the money's going into things like that. [BPROF6: 597-601]

One respondent felt that to ensure hedgerows for the future safeguards were necessary as younger farmers did not possess the hedge management skills and knowledge of the older farmers:

Farmers are businessman, the young ones are not brought up in the tradition of managing hedgerows. The decline is more serious than the uprooting. Legislation

is needed which doesn't allow deterioration. They can still be neglected and so decline, there's no law to protect and stop doing that. [BPROF4:85-92]

There was, however, evidence from those who had daily contact with farmers that large grant schemes were not necessarily the most appropriate form of assistance. Small grants to farmers and local advice have been cut in many areas and respondents felt angry about losing an important resource for farmers [Nene seminar: 166-176].

7.3 WHERE THE EXPERTS PLACE THE BOUNDARY TO THEIR SYSTEM OF INTEREST

The expert category's view described here has many aspects in common with the perspectives of the other categories. However, unlike the public and to a certain extent the farmers, the experts tended to separate out the different aspects (ecological, historical, and cultural) of their relationship with hedgerows.

Although the expert category is broad and covers a diversity of interests, the dominant interest for this category has been on the wildlife importance of hedgerows and to a lesser extent their historical importance. This has been particularly apparent in government policy and the related academic research. Research and recommendations concerning hedgerow management have also focussed on the wildlife aspects of hedgerows.

Experts have their own definitions of what they consider to be important hedgerows. Hedgerows are considered by this category mainly as *countryside* features, with urban hedgerows receiving little attention. Although the ordinary was recognised by some of the experts, it was what they considered the special that was felt to be most important and thus worthy of protection. The idea of 'key' or 'ideal' hedgerows in terms of wildlife conservation was common among this category. and attempts at assessment methods have not adequately considered the subjective aspects.

Where the landscape importance of hedgerows is considered, it has mainly concentrated on the hedgerow's role in improving biodiversity in the landscape. Although there has recently been recognition by some researchers that hedgerows need to be considered at the landscape scale (Burel and Baudry, 1995) experts

have tended to focus on the individual hedge both for management and legislative frameworks. Yet, management needs to be also considered at the landscape scale, to ensure a high degree of diversity and provide networks of interconnected hedgerows with connections to sources of forest species. Further, grant schemes with limited funds which can only focus on areas felt by experts to be in greatest need, will inevitably have limited impact at the landscape scale.

This category is the only group currently able to directly influence where government grants should be directed. It is also the category with the greatest degree of influence on policy making and whose views are allowed a voice. However, the expert perspective does not generally place hedgerows in their cultural context. Although landscape values such as aesthetic and visual aspects are acknowledged, they are generally treated as secondary by the experts. A 'rational' and 'objective' view of hedgerows dominates the 'expert' perspective, with hedgerows and the landscape being viewed in terms of 'habitats' and 'links', 'historical documents', or 'a resource'. The individual views of the experts, in particular, demonstrate the way that the experts also hold subjective views on aspects of hedgerows.

These last three chapters have set out the different categories' perspectives. They contain much detail, but I felt it was necessary to allow the data to 'speak for itself' and to demonstrate the richness. The section headings have related to the themes generated from these data and are consequently directly relevant to the data used within this study. The following chapter draws these perspectives together and presents the themes or higher categories representing the move towards formal theories which may be more widely applicable.

CHAPTER 8

DRAWING PERSPECTIVES TOGETHER

The previous chapters set out descriptions of the relationships that different groups have with hedgerows. This chapter brings these different relationships together and considers the different perspectives that people have on hedgerows. Although the different categories were diverse and there was much variation within each category, clearly identifiable category perspectives were evident in the data.

Drawing on the higher, core categories or main themes that emerged from the grounded theory process, the first section considers the commonalities found in peoples' relationships with hedgerows. The following sections then examine how and why peoples' relationships differ. Section 8.2 discusses the way that people were found to have both a rational, or objective, and an emotional, or subjective, view of hedgerows and section 8.3 examines the impacts of these different views. Section 8.4 then draws on evidence from the hedgerow regulations discourse to demonstrate the way that certain stakeholder views have been neglected within decision-making processes concerning hedgerows.

8.1 COMMON BOUNDARIES

Although both the media and academic studies on farmers and conservationists often portray conflicts between different categories of people, the evidence from this research suggests that while there are a variety of issues where the three categories emphasis was different, the categories actually had much in common. All categories expressed a preference for landscapes with features in them and rolling scenery. For all categories hedgerows were important for the way they break up the landscape, providing a patchwork pattern, colours, smells and signs of the changing seasons, and all categories had a visual and aesthetic preference for tall and bushy hedgerows. Hedgerows provided enjoyment for peoples' memories,

provided connections with their past and were part of their daily lives. Although, for some farmers, these aspects applied more to particular areas of their own farm not viewed as being part of their commercial operations, or to hedgerows elsewhere.

8.1.1 Pride

Pride was a strong category across all the data, operating at both the landscape and individual hedge level. All categories spoke with great pride in what they perceived as being 'their' hedgerows. People demonstrated strong feelings of hedgerows as part of a national heritage and as part of the English landscape. Hedgerows appeared to be synonymous with the 'patchwork' of the English countryside, they were a quintessential part of what made the landscape English. Some people also believed that the unique "patchwork" effect was something visitors to England expected to find and expressed pride in their hedgerows as a tourist attraction. While members of the public category were particularly proud of their garden hedgerows or their local hedgerows, farmers were particularly proud of the hedgerows on their farm. This was especially evident from their enthusiasm when showing me round their farms.

8.1.2 Sense of place

All categories demonstrated an awareness of landscape character. Although for some people, particularly some of the Cambridgeshire farmers, hedgerows were not considered necessarily part of the character of their local landscape, for all categories they made an important contribution to the local landscape as part of the local distinctiveness of their area. Local distinctiveness is a relatively new concept (Clifford and King, 1993). It is about the relationship that people have with places. For example people may have strong allegiances and complex feelings about a place which they find hard to put into words, whether commonplace or rare, beautiful or ordinary. Clifford and King refer to local distinctiveness rather than regional diversity, which implies a larger scale and is seen to encourage strategies which result in homogeneity or a loss of that which is valued locally i.e. the historical, cultural and ecological richness specific to that locality. The findings from this research would suggest that it is at the local scale and with this richness that people view hedgerows.

8.1.3 Connection

People felt that hedgerows were not just part of their heritage and landscape character but also provided a connection with the past. They often referred to them with feelings of nostalgia and emotion, particularly when remembering past landscapes or childhood memories. Such connections were tied in with the ephemeral aspects of hedgerows, such as smells and the changing seasons and also feelings of security and protection. Hedgerows provided a mysterious and an intimate landscape. While these aspects are often ignored by policymakers and planners, the importance of such aspects has been noted by Brassely (1998) and Appleton (1996). Brassely has suggested that the importance of the ephemeral aspects of landscapes may be linked with our past as an aspect of survival, such as the need to find food. Appleton also comments on how humans are bound to the landscape by their biological needs, and proposes 'habitat theory' which links our need to survive with our aesthetic appreciation of landscape. Thus people's preference for a hedged landscape rather than a "barren" one, their aesthetic appreciation of substantial hedgerows, rather than small ones, and the attraction of hedgerows as providers of wild food, may be evidence that hedgerows are linked to us in an atavistic way.

8.1.4 Experiencing

Images of hedgerows and the countryside throughout the study had a romantic quality yet they came from real experiences and interactions that people have had with their environment. Pleasure in experiencing the hedged countryside - the landscape patterns, colours, seasons and wildlife aspects, were evident in all categories, whether it came from owning their own land, country walks or journeys in the countryside. People described hedgerows and the countryside that are real places, ones they know or have visited. They expressed their affection for the ordinary countryside and not the ecologically important or designated areas of outstanding natural beauty. i.e. the 'special'. They also included the human artefacts. Throughout, most descriptions included things that people like about hedgerows, with people often struggling to find things that they disliked. The images they depict are part of a description of their connection with the countryside and particularly for those living in an urban environment, their gardens.

It was the opinion of one farmer that members of the public had a “chocolate box” image of the countryside which they wished to preserve [CF2]. Academic studies have also commented on the way that the English countryside is ‘idealised’ or romanticised (for example Short, 1991.) However, as noted above, the evidence from this research suggests that, at the level of the individual, the images that people hold of the countryside are based on their experiencing of it and relationship with it, rather than some notion of what would be ‘perfect’. All categories were aware that there was a difference between what they may like to see and what is realistic. They were also aware and accepting that the countryside will inevitably changed with time. This is consistent with findings by Halfacree (1995), who in a study of rural residents’ images of the term rural found that people do not necessarily have a naïve view of some mythical ideal.

8.1.5 Englishness

The research further serves to highlights the way that studies of Englishnesss and the countryside or landscape often focus on drawing out broad themes relating to political movements in wider society (for example Matless, 1998). These studies conceal the notion that individual people form complex relationships with the landscape around them. Notions of Englishness and landscape are to do with their local associations and connections with the landscape of which hedgerows are a part. As commented on by Cloke (1997), it is important that expert constructions, for example, from popular culture, consider their interconnections with actual practices in order that they are relevant to those who live work or simply enjoy the countryside.

8.2 RATIONAL AND EMOTIONAL BOUNDARIES

The commonality within the data represents the emotional relationship that people have with hedgerows. People were generally found to have more than one relationship with hedgerows, particularly individuals who worked with hedgerows in a professional capacity such as advisors and farmers. It was found within the data that people often spoke from both a personal or emotional and a professional or rational point of view. It is important to point out here, however, that this should not

be viewed as a duality. Both the emotional and rational, the personal and professional were present in peoples' relationships. Even for people speaking mainly from a rational perspective, the emotional or personal underlay their view. The differences depended on which perspective was allowed to be dominant. As Edwards (1997) notes "emotions are often defined in contrast to rational thought and are conceived to be the natural bodily experiences and expressions, older than language, irrational and subjective, unconscious rather than deliberate, genuine rather than artificial, feelings rather than thoughts."

The importance of the emotional or subjective views on hedgerows, held by experts, farmers and the public was evident from the research, however, the distinction was particularly apparent within the farmer and expert category. The distinction between the personal and the professional was often mentioned by the expert category who were concerned that they should maintain a rational or professional view. However, particularly for the farmers, the emotional views had a strong influence on what many actually did. For example, although farmers stressed the need to run a business and make a profit, odd corners of the farm would be allowed to run more 'wild'; hedgerows viewed from the farm house or garden were allowed to grow taller and particularly for the those who had been brought up on the farm, areas associated with particular memories were often treated differently.

The next section examines some of the consequences of the separation between the rational and the emotional aspects of peoples relationships, and emphasises the way that what is considered rational will depend on a person's perspective. It includes the core categories emerging from the differences within the data and explores the different boundaries in people's relationships with hedgerows and each other.

8.3 RELATIONSHIP BOUNDARIES

8.3.1 Ownership boundaries

While the public particularly considered the hedged landscape as part of their national heritage and local hedgerows as in some way belonging to them because they have "always" been there, the farmers had a much narrower perspective of ownership of the countryside. That hedgerows were originally planted and

maintained by previous generations of farmers led to a strong sense of hedgerows 'as theirs' not just as actual owners but as part of their legacy left to them by previous farming generations. Farmers viewed themselves as responsible custodians of the countryside and this was related to their strong resentment of 'outsiders' telling them what they should or should not do. Feelings of ownership also appeared to be tied to their view of their farm as a part of their 'home' and as an extension to their 'garden'. They frequently drew analogies with how non-farmers would feel about being told what to do with their gardens.

However, farmers also possessed a wider view of ownership. Hedgerows were viewed as a "cultural good" and the NFU, for example, took the view that the public, tourism and leisure industries were having "free use" of the countryside (NFU, House of Commons, 1998a). However, within the interview data, the wider view of ownership tended to extend to future generations rather than today's general public.

The notion of the countryside as a commodity or service for which people may pay is also prevalent among sectors of the expert category, for example those favouring cross compliance (Harvey, 1997) and academics concerned with methodologies which attempt to incorporate ecological goods into land use decision making (see for example, Edward-Jones, Edward-Jones and Mitchell, 1994; Willis and Garrod, 1991; Bateman, Diamand, Langford and Jones, 1995) and is evident in programmes such as English Nature's approach to 'Environmental Capital' (CAG Consultants, 1997).

Grant schemes, in some respects, give a degree of ownership to those who are not farmers. However, they rely on the co-operation of the farmer and there is little scope for the tax-paying public to influence decisions or planners to control them. While the Government and policy makers, whose main concern was protecting biodiversity in the landscape, preferred 'whole farm approaches' and nationally applicable schemes, the farmers and some advisors preferred 'one step at a time', local approaches. Further, while experts viewed grants as 'compensation', i.e. paying for the kind of countryside they wished to see, the public category frequently viewed grants more as a 'gift'. However, for some farmers they were both 'compensation' and a means of boosting their declining incomes.

8.3.2 Functional boundaries

Non-farmers perceived hedgerows as having a greater functional value than the farming community, who frequently mention their lack of value to their farms, see table 8.1).

Table 8.1: The functional value of hedgerows mentioned by different categories in their evidence to the Select Committee.

| Non-Farming Community | Farming Community |
|--|---|
| CPRE, National Trust (Source: House of Commons,1998c) | NFU and CLA (Source: House of Commons,1998a) |
| As boundaries Retain stock (although few are actually stock proof today) Protection and shelter for crops, livestock buildings, rights of way. Perpetuating local skills crafts and traditions. Soil boundary markers (picking out differences in soil type and workability – one of the earliest practical functions largely lost today. Soil protection and prevention of erosion. Hunting and shooting Timber and brushwood – many hedges coppiced or pollarded for poles for thatching spars, handles and fencing, oak in some areas for timber. Screening Crop pest and predator control Buffer zones for control of agricultural nutrient run off Alleviation of flash flooding by the retention of water run-off and groundwater re-charge Air quality improvement – act as buffer zones | Stockproof fence Shelter Boundary round a holding |

None of the farmers interviewed had considered hedgerows as useful for commercial timber, air quality, flood alleviation, or as a buffer zone and only those who had had a lot of contact with advisors considered them useful for insect pest control. In some cases this may be due to farmers perceiving there to be a problem in the first place. For example, the Norfolk group felt that their local farmers, despite dust storms in the area, did not treat soil erosion as a serious problem. A hedgerow's function for preventing soil erosion was not therefore considered. The shelter benefits were important to members of the public, particularly walkers and

cyclists, although there was no evidence within the data that the farmers had considered this aspect within their management practices.

8.3.3 Management boundaries

Farmers generally tended to draw their boundary around farming as a business. Hedgerow management was perceived as part of the farming operations rather than a conservation strategy. While the public felt that farmers were distancing themselves from nature as a result of modern farming methods, the farmers felt that they had a close relationship with the countryside. They had strong emotional attachments to their farms and the English countryside. They were managing hedgerows for birds, for tidiness and occasionally for aesthetics, whereas the experts and public felt they should be managing them for wildlife and their contribution to the landscape. Consistent with the findings of Carr and Tait (1991), farmers were found to be frequently unaware of how they could manage their hedgerows for the benefit of wildlife or that some hedgerows had a higher conservation value for the experts, such as a parish boundary hedgerow. This was also the experience of the Norfolk group, and was mentioned by John Young, Head of Land Agency and Agriculture at the National Trust:

“I think there needs to be an education process. I talk to farmers because that is what I have most experience of and many of them are not aware that they have important hedges, that they may be old parish boundaries or that there are ten woody species in that hedge because nobody has bothered to tell them and they had not really been interested.” (House of Commons, 1998b).

However, farmers generally appreciated that other groups felt them to be important but felt unable to act in the interests of others where it conflicted with their own interests, i.e. the farm as a business. This emphasises the importance of demonstration farms and contact with other farmers as a way of showing how wildlife conservation and the farm as a business can be integrated. It was evident from the primary data that the groups did not necessarily have much appreciation of other group's views.

Frustration was an important category. Frustration of the experts and public over farmers not seeking or listening to advice or others views, and farmers with advisors for not accepting their views and experience. Although there was a general view among all categories that farmers were responding to changing views on the environment, the public and experts felt that it was not occurring fast enough

or with all farmers. The view that “farmers won’t do things unless it suits them or we pay them for it” [CPROF1: 88-89], was common among the expert and public category. One of the main factors affecting hedgerow management for conservation is probably cost. Recent research on costs indicate that measures which increase wildlife benefits may be more expensive than other management methods (Doubleday, Clark, McLaughlin, 1994; Barr et al., 1995). Management practices such as coppicing or laying (see figure 7.1 section 7.1.5) for example, are considerably more expensive than fencing and studies suggest that changing from the most common hedge type, i.e. an annually trimmed hedge of about one metre high, to a taller wider hedge may be prohibitively expensive. The inclusion of a field boundary strip also carries additional costs. In contrast hedge removal can reduce costs. However, all the farmers were using some of their own money to fund their hedge work, whether planting new hedges or maintaining them. Limited funds are available for the management of hedgerows, therefore most hedgerows have been and are currently being managed without Government funds. The farmers interviewed for this research were often not seeking full payment but help and particularly recognition for what they were doing.

It was evident from the farmers’ and experts’ perspectives that for some people, conservation had an image problem. It is questionable whether the term ‘conservation’ is meaningful and useful in a farming context. Studies such as that by Beedell and Rendall (1995) appear to demonstrate that farmers treat conservation as a separate activity from their main farming activities, and that farmers’ interpretations of the term are different from those of the experts. However, hedgerow management, is considered by farmers to be very much a part of farming activities, although not necessarily a large part. Farmers may manage their hedgerows for the benefit of both themselves and the wildlife they enjoy, without this being considered as ‘doing conservation’. This is a kind of ‘hidden’ conservation which does not necessarily appear in studies and statistics. It also includes activities that farmers carry out as a result of a tradition of having hedgerows on farms. A number of the farmers in this study did not wish to have grants for the work they were doing, or could not get them, or did not wish to have ‘expert’ advice. Their ‘conservation’ work will also go unnoticed and serves to distort the image of farmers and conservation.

Within the interview data it was apparent that farmers were not passively receiving information and advice. While the experts’ view of hedgerow management is based

on academic research, farmers' hedgerow management decisions involved a complexity of factors which are unique to an individual farm and farmer and are based on their experience. Farmers were often willing to try things, however, they needed to feel that their view, grounded in their own experiences, was appreciated. There was evidence that advisors working with farmers was an effective means of encouraging the farming community to take up conservation grants and environmentally friendly farming and this was also commented on by English Nature as being their experience (House of Commons, 1998). However, there was evidence that the expert view did not necessarily alter the farmers' view when their own experience contradicted it. This was particularly demonstrated by the refusal of some farmers to believe that species of farmland birds are in decline. Even the farmers who were committed to what they were doing under the Countryside Stewardship were found to adapt the advice or continue with practices that were not recommended if they felt the advice was flawed according to their own experience. This emphasised the need to value the perspective of the farmers on equal terms, even if it is not agreed with, and to work with them rather than being prescriptive. This was the approach that the advisors that were highly respected by the farmers had adopted. As a result those advisors were influential.

Trust was an important category concerning the relationships between farmers and advisors. It was found that farmers did not appear to appreciate that experts do not necessarily have solutions. It was equally apparent from the farmers' experience that some experts had also not been honest about their own abilities or knowledge. This had led to some farmers failing in their attempts at conservation and consequently mistrusting advisers.

The farmers involved in 'research' on their farms demonstrate that there is much to be gained from partnerships and recognising and acknowledging that it is a joint learning process. Whereas the experts tended to place farmers outside the research boundary and to view research as something that was done by researchers often using experimental sites, farmers were found to be placing themselves within the research boundary. They generally demonstrated a willingness and enthusiasm for experimenting. They also had valuable local knowledge. The indications are that farmers are willing to try things and to adopt practices they find to be successful and fits in to their farm management. This gives a farmer a feeling of ownership over what they are doing rather than feeling forced. However, the evidence suggests that acceptance of expert advice requires

relationship building, which requires time. It also emphasises the need for local advice to meet local needs. Hedgerow management has been part of the farmers' lives for centuries, it is only recently that experts have taken an interest. It is therefore appropriate that farmers have some ownership over the *process* of change.

Table 8.2 gives some of the potential barriers to hedgerow conservation on the farm that the different categories mentioned in the interview data.

Table 8.2: Potential barriers to hedgerow conservation (from interview data)

| | |
|-----------------------------|---|
| <i>Farmers</i> | Time; money; paperwork; complexity of grant application; conservation perceived as 'uncool'; perceived disrespect of views/knowledge; concern over public access to their land; landlord disinterest/lack of support, lack of confidence in managing hedgerows for wildlife, lack of emotional attachment to farm/countryside; 10 year agreements too binding; perception of conservation as a hobby. |
| <i>Professionals</i> | Money; loss of skills/know how; degree of wealth of farmer, targeting wrong person – farmers wife more responsive; complexity of grant applications and paperwork; hedge contractors pushing for work; dislike of authority/being told what to do; lack of conservation education; neat and tidy culture. |
| <i>Public</i> | Money; time; lack of interest; farmers as increasingly becoming business people; county councils set bad examples; human nature; |

8.3.3.1 Traditional techniques

All categories appreciated seeing traditional styles of hedge management, although their appreciation was not born out of a desire to preserve and recreate an 'idyllic' past landscape. Rather they perceived such management as creating an aesthetically attractive hedge and maintaining a common heritage through local rural traditions. They were also felt to be valuable local craft skills. The farmers were not opposed to using traditional techniques, but they were perceived as being too expensive and time consuming. Nevertheless, for those who felt that they were

restoring their farms to how they had once been, traditional techniques were felt to be very important. While the experts and public favoured traditional techniques they appreciated that for many farmers they were not practical without financial assistance.

In spite of this, traditional forms of management practices, such as hedge laying or coppicing, often appeared to be a source of misunderstandings between farmers and members of the public. Members of the public category were generally found to be unaware of traditional hedgerow management practices and such work can temporarily appear visually quite drastic to the hedge or hedged landscape. One advisor had overcome such misunderstandings by issuing signs to farmers for use when work was being carried out to ensure the public were informed [BPROF5: 94]. The public category were found to be generally unaware of how grant support was being used. In this respect traditional forms of hedgerow management can also have a role as signifiers of care in the countryside, offering a very visual way of demonstrating to the public where their tax money is being spent and areas where grant aid is being used for this purpose.

8.3.3.2 The importance of image

The interview data indicates the importance of image. The farmers interviewed all felt that attitudes towards conservation had and were changing and that things were better than in the previous generation. This view was also reflected by Lord Marlesford in the 1997 debate over the hedgerow regulations [House of Lords Debate 20.3.97 Hansard: 295-315]. However, wildlife conservation appeared to have an image problem for some farmers.

Most farmers felt very concerned about the image they were portraying to the public yet they appeared to be unaware of the way that their hedgerow management provided a visual demonstration of care or lack of care in the countryside by farmers to the public and experts. While annual trimming was a sign of lack of care, less frequent trimming or traditional management methods which resulted in wilder more bushy hedgerows demonstrated care of the countryside and its traditions. From the public's perspective, management of the countryside that is sensitive to their views can improve the image portrayed by the farmers, yet farmers appeared to be unaware of the extent to which non-farmers notice what they are doing. This suggests that managing hedgerows for wildlife and landscape values may be one way of fostering good relationships between categories.

Roadside hedgerows and footpath hedgerows, for example, may have a particular role to play in improving relations. Encouraging new hedgerow planting along boundaries and footpaths could benefit the farmers' image in addition to addressing concerns over public access. However, the evidence also suggests that farmers may prefer to have tall hedgerows in such places where they would restrict public views and provide privacy, which may not be popular with members of the public who appreciate views. Such plantings also potentially affect the visual aspects of relatively flat open landscapes such as those of Cambridgeshire, and may be unpopular with those experts who value the character of former open landscapes (Hooke, 1999).

Thus, opportunities exist to use hedgerow management to benefit the image portrayed to all categories. In Cambridgeshire, for instance hedge planting alongside public rights of way could create privacy for farmers, homes for wildlife and a visual and aesthetic amenity for the public. Less frequent trimming and traditional hedgerow management could improve farmers' environmental image as well as improving conditions for wildlife and as an amenity. Where grant aided management takes place, such as hedge laying, it can also be used to demonstrate to the public that their tax money has been spent on something they appreciate.

8.3.4 Loss boundaries

Current hedgerow loss was a cause for concern mainly among the experts and public categories. Farmers felt that hedge removal was something that was carried out in the past and was now only carried out by a few irresponsible farmers. There were, however, differences of opinion over what the term 'loss' actually meant. For the farmers interviewed, loss was perceived as hedgerows being physically removed. However, following the Institute of Terrestrial Ecology hedgerow survey (Barr, Gillespie and Howard, 1993), for the experts loss has also meant hedgerow 'loss' through neglect, i.e. those left un-managed or over-managed. Both the NFU and the Hedgelaying Society have commented that the word 'loss' is often misused (House of Commons, 1998a and b). Dr. Clark of the NFU stated in his evidence to the Select Committee (House of Commons, 1998a) that 'relict' hedgerow was a term "invented" by the Institute of Terrestrial Ecology during the Countryside Survey and that to a laymen a 'relict' hedgerow, such as an overgrown hedge or line of tall trees and scrub, was often seen as an attractive landscape feature with

significant value to wildlife. Both the interview data and questionnaire survey would support this view. For many people such hedgerows were highly valued,, particularly for their contribution to diversity in the landscape and in some regions gappy hedgerows are valued as part of the character of the area.

8.3.5 Historical boundaries

All categories viewed hedgerows as being part of our heritage. However, what they meant by historically important appeared to be differ. For the expert category historical importance was viewed as a something which could be objectively evaluated in some way, for example, through the use of maps or geographic information systems. Historical importance was concerned with very old and enclosure hedgerows, those associated with historic landscapes or historical features such as ancient monuments or old estates, assart hedgerows and ancient, species-rich hedgerows. For local people and some farmers, hedgerows remembered within their lifetime held significant historical importance, such as those remembered from childhood and those associated with local events. They felt strongly that hedgerows were important for their value to people in the present day, regardless of a hedgerow's age, and a hedge that was valued by them for its age may have actually been planted in their lifetime. Historical importance was therefore not something which could simply be objectively recognised from historical documents.

Although the farming category mentioned traditional features as being important and recognised hedgerows as part of Englishness and our heritage, they did not appear to particularly consider their historical value to the farm. Most said that historical importance was not something they had thought much about. They appeared to be unaware of the potential historical importance of their hedgerows and one Bucks farmer [BFSI2] said he could not understand why a parish boundary should be considered important. This view was confirmed by the experiences of the Norfolk group. However, there was also evidence that for those aware of the historic value of their hedgerows they could instil a strong sense of pride.

8.3.6 Wildlife boundaries

People generally thought of hedgerow importance as being multifaceted. The public particularly viewed aspects of hedgerows in context rather than isolation. For

example, although they may have a particular love of birds or plants, the public did not appear to consider the different values of hedgerows independently of one another, with the aesthetic, visual and ephemeral aspects forming part of the whole and carrying equal importance.

Unlike the experts, who discussed hedgerow wildlife in terms of for example, quantities or rarity, the public and farmers frequently expressed their appreciation of hedgerow wildlife as an activity. For example, to the question concerning what they liked about hedgerows one questionnaire respondent answered “looking to see what lives in them” [R:18]. Their appreciation of hedgerows came from experiencing them. Unlike the experts they were not generally concerned, with how many or what species of birds, plants or small animals were in a hedgerow, although it was often felt that such knowledge could enhance their appreciation, but with the pleasure from the acts of watching, finding or smelling, etc. Hedgerows tended to be considered by the public as ‘homes’ for wildlife rather than habitats and it is this view of hedgerows as ‘homes’ that is linked with a strong dislike for mechanical trimming. A hedge did not necessarily need to have ecological or historical importance in order for it to have importance for people as a countryside feature. The public and farmers were also less concerned than the experts that a hedgerow should contain native species.

8.3.6.1 *Diversity boundaries*

Diversity was an attribute that all categories felt to be important concerning hedgerows and the landscape. However, like loss, diversity possessed different meanings for the different categories. For the experts, and experienced lay people, diversity tended to centre around species diversity - diversity generally meant biodiversity. Diversity of structure, for example, was important because it resulted in diversity of species. The farmers, and the public however, frequently commented on variety rather than diversity. For farmers references to diversity tended to be concerned with management and the structure of the hedgerows, whether they were tall or short. For the public, diversity in hedgerows was something which was more to do with the visual aspects and the pleasure that they gained from them. It embodied a general appreciation of hedgerows which contained variety of species, colour, smells, structure etc. They did not appear to think in terms of the hedgerow’s contribution to biodiversity, which in many cases was an unfamiliar term. Wildlife corridors were also not something which the public and farmers

generally considered, except when they had had a lot of contact with wildlife advisors.

The current Government's emphasis is on the importance of hedgerows for improving biodiversity in the landscape. However, this research suggests that diversity may not be the only criterion for hedgerow conservation and biodiversity indicators say nothing about the wider picture of hedgerows within the landscape. Hedgerows may be regarded as Critical Social Natural Capital (CSNC) i.e. natural assets which do not necessarily have a very high ecological or scientific value but which have a high value to the community (English Nature, 1995). As stated by English Nature, "social considerations are very important in the identification of critical features of the environment for people". Yet research, policy and grants for hedgerows remain focussed on their ecological value and particularly on their importance for biodiversity.

8.3.7 Landscape boundaries

The impact of the emotional and subjective aspects of peoples' perspectives becomes particularly apparent when considering landscapes. While farmers primarily viewed their farms in terms of a business, they were frequently found to act on their emotions when it came to managing their hedgerows. The reason for the continued existence of hedgerows in a landscape where few farmers perceive them as having any functional value, lie within the emotional domain. The potential landscape impact that differences between the subjective values and rational values can have is demonstrated by one farmer and his wife. Although they both agreed on the hedgerows as important visual features on the farm, like members of the public, she preferred more overgrown "wild" hedgerows with brambles and blossom, whereas he preferred them to be bushy but neat. The result was a compromise with some being left neater than others, providing a diversity of hedgerows on the farm.

The rational view of landscape has led to an emphasis by experts on quantifying the subjective landscape values among experts. It has also resulted in different aspects of landscape being separated out. For example, when considering the visual landscape amenity, there was a tendency for the expert view to emphasise the general pattern of the landscape. This is demonstrated by D. R. Helliwell (quoted in Department of the Environment, 1996) who stated that "visual amenity value will be dependent more upon the landscape pattern than on the hedgerow

itself". However, this was not the view found in the public data. For this category visual amenity was more likely to be found in a footpath hedge or at the bottom of their garden. Especially at certain times of the year, for example, in spring when the blossom hawthorn is covered in blossom, or autumn when the hedgerows are covered in berries and hips and different leaf colours. Visual amenity was viewed by this category at different scales and was particularly tied in with other aspects such as the wildlife and the ephemeral, i.e. the transient aspects of hedgerows such as colours and smells.

The differences between the categories' boundaries becomes particularly apparent when considering hedgerows in their landscape context. Both farmers and experts expressed similar experiences of hedgerows when considering them in a non-professional context. However, as farmers and professionals, they tended to separate out and emphasise the features of particular interest to them. While farmers placed emphasis on their need to run a successful business, the experts' relationships were dominated by the ecological aspects of hedgerows, viewing the landscape contribution of hedgerows in terms of biodiversity and links between habitats. In contrast, the public placed emphasis on the general value of hedgerows to the countryside, landscape and its wildlife and emphasised landscape in terms of experiences. They tended to answer the interview questions on landscape at length, describing walks and picnics and general countryside experiences of which hedgerows were an integral part.

8.3.8 Trust, awareness and understanding

"England's history is written in the countryside, but to farmers history is bunk." (The Guardian, daily newspaper, 2.7.98, p.19)

All categories recognised that the countryside should be allowed to change with time and that legislation could not be the only solution to protecting hedgerows. The differences lay with what kind of change should occur and how. Contrary to the view commonly portrayed in the media, it was found that, despite their differences, there was much understanding of other categories' perspectives, with understanding being an important category in the interview data.

Awareness was also an important category within the data. On many issues there was found to be a lack of awareness of others' views which could lead to misunderstandings. It was equally apparent from the data that awareness of others

views could have a significant effect, particularly when it was combined with trust. There were indications that a farmer with experience outside the farming community may have a greater appreciation of the perspective of others and a stronger sense of responsibility to others in society. For the public educational walks had the potential for enhancing their appreciation of hedgerows. For farmers, visiting demonstration farms or observing their neighbours could lead them to attempt or develop ideas on their own farms. Some farmers, particularly those with an interest in game, commented on how their views had altered as a result of such experiences.

All categories expressed concern over their lack of detailed knowledge on hedgerows. This may at least have been partly as a result of concern over my view of the extent of their knowledge.

People held relationships not only with hedgerows but also with each other. Trust was found to be an important category emerging from the data. Farmers felt strongly that, as custodians of the land, they should be trusted. However, they did not necessarily trust the advice the experts gave them concerning the management of their hedgerows. Neither did the public and experts necessarily trust the farmers to care for the countryside. Although they recognised it was owned by the farming community, they also considered as theirs. The farmers and public did not necessarily trust the experts, particularly the policy makers.

Generally, the public category and farmers were found to be unfamiliar with the 'expert' view of hedgerows, with only a vague idea of how they were perceived by experts. However, the groups appear to have little direct contact with each other and hence little exposure to each others' views. They do not have a forum for communicating their perspectives on an equal level where each perspective is valued and listened to. That farmers appear to have little contact with other groups of people and that this is likely to contribute to misunderstandings or conflicts, particularly between conservationists and farmers, has also been commented on by Carr (1988).

Farmers themselves appear to be aware that more contact with non-farmers is necessary in order to promote understanding. As commented on in the Farmers Weekly:

"When we go to the pub we should not just sit on our favourite stool talking to farmers. All this does is reinforce prejudices. Far better to reach out and enter into

conversation with newcomers, doctors, lawyers, office workers and housewives who share the bar.” (David Richardson, *Farmers Weekly*, 20.11.1998).

8.4 NEGLECTED RELATIONSHIPS

There was evidence within the research that many people from both the farming and the public categories felt that it was difficult to make their views felt. They expressed disillusion with the way that, as individuals, their voice heard the things they valued were neglected. The following quote is typical of the kind of comments made:

I appreciate being able to help you with this project, not quite sure what good it will do. I think hedges should be looked after and should be maintained. [BPSI10:318-326].

Farmers were very keen to discuss with me what they felt their problems were and also expressed feelings of resignation - they were glad that someone was taking an interest, but again did not feel it would make any difference. Across the data there is a strong sense of the need for fairness.

That the perspectives of individual farmers and members of the public are neglected is particularly apparent within the discourse on the hedgerow legislation. Many of the fears that the farmers expressed about the legislation stemmed from their lack of knowledge of what it said, how it operated and what this meant for them in practice. Not only have these and other interest groups largely been excluded from the discourse, but as the following sections demonstrate, the experts concentration on the rational or objective view of hedgerows has excluded part of many people's relationships with hedgerows.

8.4.1 The 1997 Hedgerow Regulations

Evidence from the responses and interview data suggests that many people or organisations who wished to express their view had been excluded from the consultation process. It was apparent from the consultation documents that even among the expert category many had not been given enough time to respond satisfactorily or had only received the documents by chance. The Bat Conservation Trust, for example, reported that they were not sent a copy of the draft and so felt unable to give specific comments on the regulations, their response simply

stressed the importance of hedgerows as habitats for bats (CDR, 6.12.96). The timescale also meant that many of the 'appropriate' bodies consulted did not have enough time to consult with their wider membership, for example, J. Edwards of Environmental Enhancement, Northallerton (CDR, 27.11.96), commented that they had to provide an unconsidered and hasty response as they had been unable to consult their members within the timescale of the consultation period.

Although the Country Landowners' Association and National Farmers Union were considered to represent farmers' views, the farmers interviewed generally felt that their voice was not heard and were often scathing about the NFU's representation of 'their' view. This was also the view of one of the few farmers who responded to the consultation document (Mr. Hawkins, Northampton. 28.11.96), while the National Hedge Laying Society commented that:

"Sadly the more vociferous "urban folk living in the country" (and often well off and well educated) members fail to note anything that does not conform to their idea of hedge loss, ancient hedges and so on, so any Government department is offered a one sided influential view, not the more reasoned one of the groups founders".
(National Hedge Laying Society, House of Commons, 1998b).

8.4.1.1 *The Issue of landscape values and subjectivity*

The loss of a key component of the 'English landscape' was one of the main reasons behind the initial call for legislation (Wilson, 1994 and Countryside Commission, CDR 12.12.96). As the Countryside Commission pointed out (House of Commons, 1998c) "the contribution of field boundaries to the visual landscape is of value in its own right". One of the key concerns raised in the consultation process was the way in which ADAS, who were commissioned to define criteria for identifying an important hedgerow, had viewed landscape importance as an inherent feature of other criteria for identifying what was an important hedgerow rather than as a criterion on its own.

The view of ADAS when formulating the criteria for 'important' hedgerows, was that the criteria should be made as objective as possible to ensure that a standard procedure could be made applicable to the whole country, (Department of the Environment, 1996b). Both the NFU and CLA supported this view. They felt the most important thing about the criteria for deciding whether a particular boundary should be protected was that it should be fair, commenting:

"The objectivity of it is the extremely important element. It is important that there should be consistent judgements between local authorities and within local authorities on the importance of hedgerows" (NFU/CLA, Q19 and 20, House of Commons, 1998a).

In their response to the consultation document they also stated that they felt that the legislation should "minimise the introduction of value judgements" (CDR, 29.11.96).

The subjective nature of landscape was also commented on by The Minister, Mr. Meacher :

"The difficulty is the word "landscape" because that is a subjective issue. It is not something that can be objectively measured." (House of Commons, 1998c).

The Countryside Commission, however, opposed the ADAS view that landscape character was so subjective that it could not be substantiated or supported. In their response to the Consultation Document (CDR, 12.12.96), they expressed concern over the way the criteria gave more weight to the quantifiable aspects. The Woodland Trust also expressed concern over the unwillingness to accept that

qualitative criteria can be applied fairly by local authorities, pointing out that “The planning system must rely on value judgements to a reasonable degree” (CDR, 29.11.96).

In their response to the consultation document, Common Ground also refer to the issue of quantification stating that:-

“...quantification should not be an aspiration. What we are trying to achieve is better decision making.....It would be much better to have people argue why they should take out a hedge, within a culture of nature conservation for nature, history and landscape, rather than the concatenation of negatives which will never be sensitive enough to cope with local distinctiveness (CDR, 3.12.96).

The anger and depth of feelings over the exclusion of landscape values and the concern over the over-emphasis on ecological values within the legislation discourse was demonstrated at a meeting for local authorities concerning the regulations at the Nene Hedgerow Seminar (neneseminar 63-94). Anger and concern was expressed that landscape character in its historical context was not considered in the legislation and that unlike ecological value, which had vast amounts of money directed at it, historical value was not taken seriously. This point was also made in the evidence given to the Select Committee (House of Commons, 1998a) and by Dr. N. Bannister (CDR, Oct.'96) who expressed concern that unlike archaeological sites and wildlife sites, there is no systematic heritage assessment of hedgerows.

8.4.1.2 Deciding what are ‘important’ hedgerows

“A hedgerow should be judged on its merit, not on whether it is in a rural or urban location.” (The Urban Wildlife Partnership, Lincoln, CDR, 2.12.96).

In the interview data, most people who had little idea of what an ancient hedgerow or ecologically important hedgerow was, considered all hedgerows to be important. The inadequate coverage of landscape and narrow definition of an important hedgerow resulted in the exclusion from the regulations of what many people value. Colin Seymour, an active campaigner on hedgerows, was the first person to bring a case to court under the Inclosure Acts, together with a local Wildlife Trust. In his response to the consultation document he commented that the view that no hedgerow could be regarded as important unless it met certain criteria was not what parliament or the people who campaigned for the legislation had actually

intended (CDR, Nov. 96). Further, within the regulations, only 'expert' knowledge is deemed acceptable. Something which was only commented upon by Common Ground:

"The more important point is the constant undervaluing throughout of local knowledge and opinion. Experts from national bodies and county organisations can never hope to record everything of interest in a county. They have to work with local people, who are the eyes and ears of their home ground. Local people should be the recorders, guardians and the keepers of records about their own places."
(CDR, 3.12.96).

The expansion this century of many towns and villages has also resulted in many previously rural hedgerows being incorporated into urban environments and many miles of hedgerows are present in the urban landscape as garden hedgerows. That hedgerows are of considerable interest to urban people was indicated by the fact that the largest number of responses to the consultation document came from urban local authorities even though the regulations do not cover urban hedgerows. The interview data also demonstrate the importance of town and garden hedgerows to members of the public. Yet, despite this, they are largely neglected by those involved in research and decision making.

8.5 CONCLUSIONS

The example of the 1997 Hedgerow Regulations highlights the way that one particular value, ecological value, has been allowed to predominate. Further, it highlights the way that the strive for objective measures creates a feeling that only objective values are valid. The exclusion of particular groups of people from the consultation process has led to a misrepresentation of the more general view of what represents an important hedge and an overemphasis on values associated with particular professional bodies. Many of the points raised in the consultation process highlight the problem of giving the task of identifying what is an important hedgerow to just one organisation. Despite the main reason for seeking hedgerow protection being growing public concern at loss of hedgerows as landscape features, many of the values of most importance to the public have been particularly underrepresented. The exclusion of the 'wider' countryside, urban

hedgerows and landscape values all represent the exclusion of certain peoples relationships with hedgerows from the legislation process.

This chapter has drawn together the different perspectives to highlight some of the key differences and similarities between different categories. That the categories did not share a common language was evident in the data. A 'rational' and 'objective' view of hedgerows dominates the 'expert' perspective. Unlike the experts who tended to separate out different aspects of hedgerows, the public did not appear to view hedgerows in isolation but in the context of the rest of the landscape and in the context of their everyday lives. This was evident in the images of hedgerows they portrayed in the interview data and the questionnaire data.

This research has concentrated on hedgerows as English landscape features. As hedgerows are cultural landscape features much of what has been discussed may therefore only be applicable to this country. I therefore sought a contrasting cultural setting as a comparison, in order to see how this may inform the English data. The following chapter examines data from a small study of hedgerows in a region of Canada and contrasts it with the findings from the English data.

CHAPTER 9

CULTURAL BOUNDARIES

This chapter explores the importance of the cultural dimensions of hedgerows through consideration of a wider range of cultural views on hedgerows. Evidence was drawn from data collected from a small field study undertaken in British Columbia, Canada. This small study was then used to inform the findings from the English respondents.

Data were collected during a visit to the Vancouver area of British Columbia in June 1998 (see table 4.4, section 4.2.1.2). Information was gathered from a wildlife conservation project run by the Delta Farmland and Wildlife Trust (DFWT) in the Delta area directly south of the city of Vancouver, British Columbia. Evidence of the farmers' perspective was taken from conversations with farmers and from the experiences of members of the DFWT. Further data were also collected from a small sample of British Columbian residents who had agreed to do self-recorded tapes and to answer the questionnaire used in the English questionnaire survey.

The data collected was not used as a direct comparison with the English data as only a very limited study could be carried out with the time and financial resources available. As the sample size of the Canadian data was small, it is generally treated as a whole with specific references made to the category that a respondent belongs to— farmer, expert, or public - where it is felt necessary.

9.1. THE CANADIAN STUDY AREA



Figure 9.1: An example of a Canadian hedgerow.

The Fraser river delta is an area of 336 square kilometres, lying directly south of the city of Vancouver in British Columbia. It is the largest estuary on the Canadian Pacific coast and consists of approximately 15,000 acres of reclaimed land rich in alluvial deposits. The Class1, soils which are noted for their high productivity and the mild climate, make Delta one of the most productive agricultural areas in Canada (Melnychuk, 1995). However, it is also an internationally important wildlife site with over 1.5 million migrant waterfowl from 20 different countries using the area annually as an essential stopping place between the Arctic and Central and South America (DFWT leaflet).

9.1.2 Delta's history

Although parts of the Fraser river delta were settled by a distinct group of Salish Indians, it was not until around 1887 that the first European settlers arrived and began to turn the area over to agriculture. The first recorded land holding in the Municipality of Delta was in April 1857 in the name of an Irish man called Patrick O'Brian Murphy. The first settlers would have found a landscape consisting of marsh with tall grasses and thick forests of trees such as Douglas Fir, Hemlock, Cedar and small groves of Cottonwoods, on the better drained areas. Estimates from travellers to the region suggest that large parts of the land would have been under water for around six months of the year. In 1895 dykes were built to keep out the winter storms and the area was drained (Phillips and Buckley, date unknown).

There appears to be little documentary evidence for the appearance of the landscape during the time of the early settlers. Searches for photographs from that

time revealed photographs that depicted people, homesteads and machinery, but rarely the land they worked.

Originally the area supported hay grain, root crops and dairy herds [Phillips and Buckley]. It was reported by one advisor [Canada 4]¹ that the original hedgerows of the area, of which there are few remaining, were planted by the early settlers. Although native black hawthorn and trees were planted as stock proof fencing, settlers of different nationalities planted different species. The Swedish, for example, planted poplars, particularly as windbreaks around their houses, while the British migrants planted the native English hawthorn which can still be seen in the old hedgerows on the Delta. As farming changed from livestock to arable, maintenance of fences became less important and hedgerows grew up naturally along the fence lines and ditches. The oldest hedgerows in Delta are around 100 years old (DWFT newsletter Sept. 1999). However, few remain. Like parts of England such as East Anglia, as agriculture intensified and farm activities became mechanised, the desire to bring as much land as possible into cultivation led to later generations taking out the hedgerows. Previously the landscape in the region had been hedged, with wide thick hedgerows.

Today the area supports around 100 farmers, growing arable and vegetable crops, and soft fruit, plus some smallholdings and hobby farms. It also contains three urban communities, Ladner, Tsawwassen and North Delta and has a residential population of approximately 96,000 (Community Projects Ltd., 1997). Delta is also subject to pressures from the increasing expansion of the city of Vancouver, whose population is projected to reach 22.6 million by 2021 (Melnychuk, 1995).

One of the issues in the area at the time of the visit was the Delta farmers' increasing interest in growing tomatoes under glass. This type of farming was financially very attractive to the farming community who were facing diminishing incomes. However, the greenhouses tended to cover large areas and were very obvious features in the landscape resulting in criticism by some people.

9.2 THE DWFT HEDGEROW INCENTIVE PROGRAM

¹ The reference in brackets identifies the Canadian respondent.

The Delta Farmland and Wildlife Trust (DFWT) is a community driven initiative. Established in 1993 with the aim of adopting a co-operative approach to conservation on farms in the Delta area, it has been heralded as an example of how farming and wildlife can coexist (Melnychuk, 1995). Funding for the work came initially from a start up grant and later a perpetual trust fund set up to mitigate the loss of habitat that resulted from the expansion of the Vancouver International airport. The DFWT's board of directors is made up of local stakeholders - long-term resident farmers, community wildlife conservationists and respected business representatives. The Trust aims to provide a forum for exchange of views, to offer educational and practical advice, and incentives to farmers and landowners for farm stewardship and wildlife conservation while operating in a co-operative manner. Although there is little direct public involvement, local community events are a regular feature of the DFWT's work and a regular newsletter is published to raise awareness. Signs are also given to farmers to increase public awareness of what the farmers were doing

The hedgerow incentive programme was established by the DWFT as part of the field margins programme which formed part of a wider stewardship initiative for Delta. The programme aims to raise awareness of the value of existing hedgerows and to encourage new planting. The DWFT provide advice on existing hedgerows and design, purchase and plant new hedgerows.

The field margin programme requires the farmer to commit to the land being used for a hedgerow for 20 years. However, there is an opportunity every 5 years to review this arrangement. The farmer is financially reimbursed for land taken out of production and the DWFT pays for the plants, planting, design and construction of the hedgerows, but not any future management. It appeared that little thought had yet been given to the future management of fully grown hedgerows and most farmer concerns currently centred around planting issues.

Unlike planting schemes in England, the DWFT bears all responsibility for planting and establishing the hedgerows. It was felt that farmers could be 'taken for a ride' by nurserymen over stock for planting, as they did not have the experience that the advisor had. Experience had shown that it was crucial for the farmers to witness success with the planting so as to gain their faith in the scheme. Therefore, any plant that dies in the first 5 years is replaced by the Trust and the newly establishing hedgerow is irrigated and cared for by the Trust to ensure its success.

It was felt by the DWFT that one of the difficulties faced was that farmers could not envisage what a hedgerow would look like once fully grown. Therefore, planting schemes are carefully designed by a landscape architect and detailed plans drawn up so that the farmer can visualise the fully grown hedgerow they were agreeing to. The hedgerows are designed to provide a diversity of structure and species. Different sizes of hedgerow are offered to the farmer, for example tall/medium and medium/small, or they are encouraged to have lines of planted trees which could provide shelter. Planting up field corners was also encouraged. Although in theory the hedgerows should consist of native species, in practice if the farmer was particularly keen to have a species he especially liked then this was included in the planting scheme. One farmer, for example had a liking for willows and although perhaps not a suitable species, this had been included in the planting.

Most of the farmers involved in the scheme were stock farmers or hobby farmers. Although it was reported as being very difficult to encourage the arable farmers to take up the scheme, the DFWT did not take a proactive approach. This was linked to the importance attached to the need to build relationships and trust. They did not want to appear 'pushy', preferring 'word of mouth' and curiosity as a means of attracting farmers. Their limited funds and therefore number of people able to work on the projects, and the need to maintain overall responsibility for all the work involved, also restricted the amount of work that could be carried out at any one time.

9.3 THE CANADIAN DATA

I would stress once again that some of the findings presented here are tentative as the study sample was small and time spent with the respondents was short. The data was used to find contrasts between the data sets rather than as a direct comparison, which would have entailed collecting the same kind and amount of data as collected in England.

As with the English respondents, there was evidence that people spoke from both a personal and a professional perspective. Two experts, for example, commented:

Personally I really like the aesthetic quality of it and I also just enjoy the sound of it (landscape). [Canada4:69-75]

9.3.1 Relationships with others

9.3.1.1 *Farmers as misunderstood*

There was some evidence that, like the English farmers, farmers in the Delta were becoming more aware of their image and that this was having an effect on their behaviour:

S: I think more and more the farmers are acknowledging the need to communicate what the public in general.....

B: I agree with that. A lot of the problem in the past is that that hasn't happened, but that's changing as we speak today. [Canada1:247-253]

M: Do you think the farmers are influenced by the media or public opinion?

W: For sure, they tune into that quite closely, yes they are very much aware of that.. [Canada4: 204-207]

There was also a feeling among both professionals and farmers that recognition was a vital component in encouraging farmers.

So I find in all the years of my working, farmers just want recognition, you know, if the public would recognise what they provide then they will do more than you think they are going to do. And you'd be really surprised, and you know, but it's recognition. [Canada4: 165-167]

Both the experts and farmers felt that members of the public did not understand the world of the farmer:

For a lot of people in the cities they get a lot of enjoyment out of just being able to drive through the farmlands, but not really realise what farming is really all about. But there's a great sort of feeling of, well they get satisfaction knowing it's there. Why it's there or how the farming community is doing is, I think, a different question. [Canada4:103-105]

Rather than feeling the farmers themselves were at fault, there was a feeling among farmers and experts that outside pressures were the main influence on the environment and that the changing face of agriculture was largely responsible for the environmental degradation of the land:

I don't think hedgerows are much different if they've got an old hedgerow, I think they'd be quite proud of it. But unfortunately the changing face of agriculture makes people do things they don't like to do sometimes. [Canda1:89-91]

9.3.1.2. Farmers as financially supported

There were differences in the views of farmers and experts and the public concerning financial assistance which centred around responsibility. As with the English farmers, the Canadian farmers primary concern was for their farm as a business. There was evidence that farmers felt that they were providing “free board for wildlife” [Canada3]. From the farmers’ perspective the main barriers to wildlife conservation on their farms were apparent concerns over interference in the economics or running of the farm as a business:

My theory is if you want trees, or if you want grain for wildlife, or if you want pampas grass or the whole works, bulrushes or whatever, you can buy it. Because our reasons for being on the land is to make a living and sustain a life style that we are used to. [Canada2:154-156]

The experts interviewed also felt that society should take responsibility for the landscape benefits that farmers could provide. Hedgerows were not perceived as being necessarily essential to the farm, therefore grants could assist the farmers to restore and manage their land in an environmentally friendly way for the benefit of wider society:

S: If the farmer’s benefiting then I think it should be a cost sharing kind of thing. If this is something the farmer is providing for society as a whole then I think the grants are appropriate.

B: I would agree with that. I think it depends who requires the hedgerow to be there for the most part. If it’s society as a whole, then there should be grants.

S: But I think if the farmer is giving up land for a hedgerow then I think that a grant is appropriate because the farmer is giving up something.

[Canada1:148-152,155]

However, for the public, farmers were viewed as needing to be responsible members of society and that with education, rather than grants, they would realise this:

I feel that it is inappropriate for government grants to be given to farmers to look after hedgerows because it is the responsibility of the individual farmer to look after his land and that considers everything that grows on it...[Canada9:101-103]

9.3.1.3 Farmers as participators

Although it was unclear from the visit as to what extent farmers felt that they were actually treated as equals, there were signs, such as farmers representation on the DWFT board and calling them 'co-operators' and 'partners-in stewardship' (DFWT newsletter vol.2 No.1) of a clear intention by the experts to regard farmers as equals or stakeholders in the projects. There also appeared to be a genuine consideration of the farming/business needs of farmers and a desire to fit in with farmers and their views.

Both the experts and farmers felt very strongly that the emphasis should be on co-operation rather than confrontation. A voluntary approach was viewed as essential to the success of any DFWT scheme. Farmers were coaxed into joining the scheme through local events and being given things to read. Legislation was not a approach favoured by the respondents generally. Incentives, rather than legislation, were viewed as a means of enhancing environmentally friendly farming while preserving good relationships between farmers and those with a conservation interest. However, the Canadian public were more keen on such an approach, feeling that protection through legislation may be a necessary option.

9.3.1.4 Experts as trusted

As with the English advisors, it was felt that it was not possible to change farmers' views or actions overnight. The DWFT considered trust to be an important factor in the success of their schemes. Farmers were felt to be more accepting of advice from the long standing DFWT advisors than the more recently appointed one. Establishing trust was perceived by advisors as taking time and commitment.

M: Do you find they listen to what you say and then do the opposite or something?

W: Oh frequently, because they just don't think you're right. But they won't tell you that. Or they'll give it a try in their own quiet way and then let you know that you are right. Its not an overnight sort of thing you know, its something you build upon.

[Canada4:233-237]

An important component of this trust appeared to be the DWFT philosophy that farming came first.

9.3.1.5 Experts as experimenting

One of the key aspects of the DWFT wildlife conservation programme was the acknowledgement by the 'experts' that what they were really doing was experimenting with the landscape. There was a feeling that the programme should therefore proceed slowly as they were still very much engaged in a learning process. Some of the planting work being carried out was actually remedial, where early 'mistakes' were being rectified, such as planting single species or non-native species.

9.3.1.6 Education

As with the English respondents, education of the farmers was viewed by the experts and members of the public as a key factor in improving landscape quality and encouraging farmers to keep hedgerows and plant new ones:

.educating people to realise the importance of hedgerows and the reason that they are so essential to our landscape. Many of our hedgerows in Canada - our farmers have removed the hedgerows and I think there's a lot of movement of topsoil. [Canada10:101-104]

There was also evidence among the experts that their appreciation of landscape was felt to be dependent on their knowledge or understanding of it:

S: It depends on the landscape actually, it depends on how much I know about the history of the landscape, how much I know about the value that the landscape has for society as a whole and for wildlife, people and that kind of thing. The more knowledge I have about that kind of thing I think the better I feel about landscapes.
B: I was going to say something similar [Canada1:18-21]

9.3.1.7 Influential relationships

As with the English farmers, there were also indications that the farmers' wives may be influential in conservation decisions on the farms, as were their neighbours:

M: Do you think the wives influence them at all?

W: Oh incredibly, yeah.

M: Do you think they have more of an interest in conservation on the farm?

W: Definitely I do, but its subtle and when they rip out a hedgerow I know it's the wives that are the ones that are yelling at them the most. And when we come along to plant a new hedgerow it's the wife saying there's your opportunity to do it right or

fix it up and so they are willing to participate. I think there's a lot of that.
[Canada4:275-394]

Similarly, it was also mentioned that farmers liked to know what their neighbours were doing.

Farmer: I go down the States for a drive and I like to see what crops are being grown. If you've got a hedgerow there you can't take a look. My wife gets mad at me though. [Canada2:204-205]

It appeared to have taken some time for farmers to change their attitudes towards the Delta project. Farmers initially appeared to be influenced by their peers, however, advisors reported that once they were able to see for themselves what was going on with the project, their views appeared to change:

So there's a lot of, you know its funny because there was a lot of resentment to putting in hedgerows at first, there was always someone got something bad to say about something. I just tried it with those that were willing to do it and work on those people and as time goes on you start hearing more and more from farmers who don't say much, Oh that's quite a good idea, I like it because its good for the pheasants, and they start to, you know, to express their own real feelings about things rather than what the more vocal farmers are saying. [Canada4:395-401]

9.3.2 Relationships with hedgerows

9.3.2.1 Hedgerows on the farm

There was evidence from the farmer interview and the farm visits that for farmers the visual or aesthetic aspects of their hedgerows were very important. This was evident in their wish to choose particular species to add to their hedgerow planting designs. Visual signs of human activity in the landscape were often viewed positively by all categories.

The importance of hobby farmers' appreciation of a hedgerows aesthetic value was also mentioned as a reason for farms retaining hedgerows, [for example, Canada 3]. With numbers of hobby farmers increasing in Delta, such people may have an important role to play in the creation of new habitats in the future:

And I say that because there are a lot of people who are buying farmland really, they like to see the aesthetic value of it and they just like the landscape thing.
[Canada4: 124-125].

Although hedgerows were not perceived as something that had to be constantly managed and were specifically designed to allow for the trees and shrubs within them to grow to their full extent, it was recognised by the advisors that future management may be a potential problem. The Canadian respondents were interested in the significance of hedgerow management problems in England.

Hedgerows as functional

As part of the Delta landscape, hedgerows provided valuable windbreaks in this very flat area and were felt by the DWFT to be important for prevention of soil erosion, protection of crops and on some farms were important as a stock proof fences. They also served as an aesthetically appealing wind barrier around many of the farmers' homes. Although those farmers with greenhouses were using hedgerows to provide visual screens, the arable farmers apparently viewed them as having little function on the farm.

Hedgerows as neat and tidy

As in England, there was evidence that an attractive hedgerow was a neat and tidy hedgerow.

F:... I don't like the blackberries it drives me nuts, I don't like the ...trees. I like a hedgerow that's organised. In Britain a lot of your hedgerows are pruned and that's very, very nice. They are almost made to look like they are gardens.

[Canada2:259-261]

9.3.2.2 Hedgerows as undesirable

In addition to envisioning what hedgerows will look like when fully grown, the experts reported that the main barriers to the wildlife conservation schemes was making a commitment to long term agreements, and the effect an agreement may have on the re-sale value of the farm. They also felt that farmers were concerned over having to retain hedgerows once they were well established.

Like the farmers in Cambridgeshire, the Canadian farmers were also apparently reluctant to reduce their field sizes as they feared this would affect the economics of the farm. There was also concern over the amount of space a hedgerow may take up compared to a fence:

But they do take space and I think that is a concern that people have about them, that a fence would take less space.... [Canada1:81-84]

Furthermore, there were indications that 'wild' areas on the farm were associated with untidiness. As mentioned previously, brambles in particular were felt to be a problem, creating an untidy and invasive hedging plant:

F: The hedgerow that I had along my farm, that was just hawthorn, solid hawthorn. That was just beautiful, nothing but hawthorns, probably about 15 ft high it was beautiful.

W: Agrees.

F: There was always something buzzing in it. But once blackberries start taking over and growing all over, I don't love blackberries. I know that for wildlife they have their place, but I think it spoils, that's not beauty that's wild.....[Canada2:262-269]

Yet like the English respondents, particularly for members of the public, hedgerows held importance for their wild fruit picking:

A particularly important hedgerow locally are possibly the blackberry bramble hedgerows that grow along the roadsides in this area, because they provide us with the great habitat for birds, they are always interesting and there's some nice fruit to be picked in the summer. [Canada10:132-135]

Farmers were also reported by the advisors as being wary about a hedgerows' effects on irrigation, ditches and pest insects. They were also concerned that weeds would spread from the hedgerows into the crops and that they would create shading problems:

F: But the ones along the field, the birch /maple mix those could be a real problem if I have to start tilling those fields and working them as crop fields (have cows in them at present). You have to stay so far away and they draw moisture away from your plants. Right now they are not a threat as they are all so small. But in time that could become a problem. [Canada2:46-51]

9.3.2.3 Hedgerows as habitats and wildlife corridors

Although their aesthetic value was recognised, the main importance of hedgerows as viewed by the DWFT was in terms of their value as habitats for wildlife, particularly raptors, and as connecting features in a landscape where little natural vegetation remains. The DWFT newsletter for October 1998, for example, cites hedgerows and grass margins as being important as refuges for predator insects;

providing a buffer zone for ditches and organic production; as feeding and nesting habitats for songbirds, small mammals and insects; and as shelterbelts. Their newsletter of February 1996 also cites them as being “miniature nature reserves” and “connecting corridors”. The Canadian respondents also frequently mentioned their value as wildlife corridors.

I think that they provide habitat for small birds and mammals and a safe way for animals to move from one area to another, that they link different types of landscapes together and they link different properties and villages and towns. I think they are a very important part of the landscape. [Canada10:33-39]

Hedgerows as habitats for birds

The importance of birds in the region, particularly, raptors, was strongly influencing the desire among the experts to re-establish hedgerows. It was felt by advisors that it was important to establish hedgerows that were diverse in structure and that this was more important than species diversity. However, establishing hedgerows for birds was a complex issue:

We get a lot of water fowl migrating through and they are very wary of hedgerows, because birds of prey tend to be in them so in the fields you'll find that the grasses or the cover crop hasn't been grazed and they'll come up to about 10m to the hedgerow and won't come in any closer. [Canada5:198-203]

Birds played a role in peoples' sense of place on the Delta and were held in special regard by the public. As one Delta resident commented:

Personally I really like the aesthetic quality of it and I also just enjoy the sound of it, I think, every type of bird that you see in the air. We get a lot of migrating birds that come through at certain times of the year and we get a lot of nesting birds. And in winter time we have a lot of non-breeding birds, such as owls and little birds that are looking for places to roost to get out of the cold. So it's always changing and its always changing with age, and I think its just you get a lot of enjoyment out of it. Enjoyment and aesthetics. [Canada4:69-75]

People viewed them as part of the quality of life on the Delta and part of the area's identity. Snow geese, trumpeter swans, eagles, and snowy owls were particularly loved, drawing people from the city out to the Delta. There was also a sense of pride in the region being an internationally important bird site.

There was also a feeling that the enjoyment gained from the wildlife was a key factor in influencing farmers:

I think that the reason they (DFWT participating farmers) like the hedgerows is because it not only provides some shelter, shade and keeps the animals in but it also, I think, you'll find a lot of these people just enjoy having wildlife around.
[Canada5:81-83]

There was interest from farmers in hedgerows as habitat for game birds:

W: Yes, they will release the pheasants in early fall.

M: And they wouldn't be interested in hedgerows from that point of view?

W: They are, if you talk to the farmers one of the main reasons they like the idea of us getting back into hedgerows is because it will help the pheasant populations.

[Canada4: 387-390]

For one farmer participation in the hedgerow project appeared to have led to a great enthusiasm for birds and also conservation on the farm. It had increased his awareness and led to him becoming a keen bird watcher.

The love of birds was also linked to feelings about trees. While some farmers were apparently concerned about the trees attracting birds which may then harvest their crops, particularly if they were farming berries, others felt they held special importance, particularly around their houses.

Oh I like the birds. I like the dead trees in them, the dead trees tops where you can see the hawk and the eagles sitting in the top. I really like that. Even just that they are attracting birds. And those are pretty majestic birds. [Canada 5: 100-102]

9.3.2.4 Hedgerows as historical features

Although their importance as a heritage feature was mentioned, there was no strong sense of hedgerows as an essential component to the Canadian landscape or as part of their cultural identity:

...perhaps this historical feature is that a hedgerow or planting of a hedge of trees usually indicated a farm close to a farmyard, a farm house, there to give them windbreaks and in that way it does help to locate the farms that may no longer be there. [Canada10:126-131]

S: From a heritage value I think that some of the older established hedgerows are important just because there is a history there that I think needs to be valued and I think witnessed by future generations and things like that. [Canada1:64-67]

9.3.2.5 Hedgerows as road barriers

One of the main functions of hedgerows for all the Canadian respondents was for privacy, particularly around dwellings. They also represented an important barrier against noise from the roads.

.....sound barriers that they give us. I think they break up a landscape and make it interesting, they can be used to contain an area which gives people a feeling of comfort. [Canada10:65-68]

S: Then there's also hedgerows that just provide noise barriers for people, they are better than just a fence you know.

B: I think I'd go along with that. In fact I think noise barriers..... it does provide a bit of a noise barrier too. [Canada1:69:72]

9.3.3 Images of landscape

As with the English respondents, the Canadian respondents were questioned about landscape so that the hedgerow questions could be placed in a landscape context. However, unlike England, hedgerows were not a key feature of the British Columbian landscape. These questions therefore evoked some interesting and contrasting answers.

The Canadian respondents appeared to possess a different perception of landscape to that represented in the English data and this may have influenced the DWFT's approach to their area which may be regarded as 'landscaping' the countryside. For example, the way that hedgerow plantings were designed and landscape architecture planting plans drawn up.

Only in the Canadian data is there mention of landscapes in a negative way:

Q: Landscapes make you feel..?

A: Well either make me feel peaceful, or threatened or concerned, I think that's probably all. [Canada10:28-29]

Other landscapes like a really polluted harbour can make me feel really depressed. [Canada 5: 51-51]

Unlike the English respondents who generally conjured up images of countryside when considering landscape, the Canadians appeared to also view landscape in terms of landscaping and urban environments:

When you use that term I always think of gardens that's because that's the term that is used for nurseries, landscaping, you don't really think, I wouldn't think of a farm. [Canada2:224-226]

B: Well when I think about landscape to me its the aesthetic value, of the land and how you would plant something on it, make it look good to what you have in you mind. [Canada1:1-3]

Gardening appeared to be synonymous with landscaping for the Canadians. Landscaping was particularly important for one farmer who spoke of his fields as being like his garden:

My dad was probably more of a carpenter and landscaper than he was a farmer and I think I've got a bit of the landscaping. I like it, I like gardening and that, so I guess you take that into the field. You get a feeling that your field, its not only a production field but its like a bit of your own garden. [Canada2:28-33]

Signs of human habitation in the landscape also appeared to be important. Buildings were included within peoples' definitions of landscape. For the buildings represented a comforting human presence in the landscape.

But the buildings are all.....I think they do leave a print. I guess I don't like that landscape...and Illinois where there's no hedgerows which are just open fields for the machinery. I feel that's very uncomfortable. I don't like that landscape at all .[Canada 5:187-190]

Whereas in the English data hedgerows were a key part of peoples' sense of place, for the people interviewed in this area of Canada the key feature appeared to be water and openness. This was despite the most prominent feature being mountains. The people of the Delta region however, are surrounded by water and its importance to them was evident in their responses.

If you look at water and look at the price people pay to have a cabin and how often they sit there like that looking at the water because you know its there and its gives you that feeling. [Canada2:408-409]

S: I like water, I like some place where there's water.

B: One of the reasons I moved up this way instead of living in Vancouver is to get more wide open spaces, bigger skies, so to speak and frankly, less rain. Which you get closer to the mountains. That's one of the reasons I made the decisions to come. I just like the openness. [Canda1:219-221]

Openness of the landscape was particularly important. Some residents of the city of Vancouver also appeared to value the wide open spaces of the Delta landscape.

People said they liked the big open skies, the dryer and sunnier climate, the wide open spaces. This area provides a sharp contrast to the dominant mountain landscape:

.... yes, people need to be able to get out into the wide open spaces and its part of human nature. [Canada4:111]

As with the English respondents, the main influences for the Canadian respondents on how they felt about the countryside appeared to come from experiencing the landscape:

Farmer: Because it was just surrounded by big cottonwoods and all that which grew up all around the river dykes and that. And it would be just like being there in a park, you'd go out on the tractor and you'd take your shirt off and pants off and sit there in your underwear and there was not a soul around, and it was beautiful and birds. Just loved it. [Canada 2: 62-68]

9.3.3.1 Trees

Trees are an important element of the British Columbian landscape. However, as a result of the intensive agriculture of the region, very few trees were left in the Delta area. The few remaining ones, particularly large cottonwoods, appeared to hold particular significance for people in this area. Tall trees were also valued for providing shelterbelts and were commonly planted around the farmers' homes for their aesthetic value. The importance of trees in the area was also linked to the importance of birds. It was reported by one person that while logging is an important issue in British Columbia little thought had been given to the remaining trees in the Delta region. The designation of the area as agricultural land meant that farmers could take out trees if they wished. Farmers from Dutch origin were felt to be particularly keen to take out any 'natural' vegetation:

I think that's important, you know to have the trees. I like the trees. Its like when you look along a hedgerow and its not, like the ones where they put all those big poplars all in a row, those don't do as much for me as the ones with trees sticking up, they're beautiful, and that looks more natural to me rather than a straight line of poplars. [Canada 5 201- 205]

9.3.4 Hedgerows as landscape features

There was apparently an increasing interest from the urban population in landscape aesthetic issues in the Delta. Hedgerows were viewed as an important landscape feature for breaking up an otherwise featureless landscape:

So they break up the monotony and relatively homogeneous fields. [Canada 5:66-67]

Well I think that they add an interesting feature to the landscape. [Canada10:33]

As with the English respondents, diversity in the landscape was important:

It breaks up the landscape as well and provides diversity in there for, I guess I'm thinking of large farm operations and things like that where you have one type of crop production being carried out and you have a more diverse hedgerow to break up the landscape a little bit there. And they also provide habitat for beneficial insects and critters and things like that as well. Feed habitat and refuge, nesting habitat. [Canada1:37-42]

They were felt to be important for providing colour in the landscape:

I think just the fact that its provided some green, which in the case of some arable land, quite often you don't see green, you might see brown, you might see yellow. Obviously it does provide some habitat for wildlife and for birds. For me I would look at that type of thing. [Canada1: 33-36]

I like to see the various colours of the various bushes and trees. [Canada9:74]

There was feeling among the non-farmers that they were preferable to a fence with a hedgerow being something they felt more comfortable with:

I just find hedgerows very friendly, a fence says keep out, where a hedgerow seems much friendlier. [Canada5: 196]

For one farmer, a sense of stewardship combined with a romantic image of the landscape had led to him planting a double hedgerow to provide a pleasant avenue, rather like a country lane, through which he could ride on his horse.

As found in the English data, the public did not separate out the different aspects of hedgerows:

Since I live in the country there are lots of areas I can call hedgerows and like to see the birds and the animals use the hedgerow, like to see, like to sense the smell of the spring from the different shrubs coming into bloom and my senses are stimulated by appreciating a hedgerow. [Canada9: 49-50]

9.3.4.1 Hedgerows as part of towns and gardens

The public particularly appreciated hedgerows for their contribution to views and their local environment. In this respect the well hedged local hobby farms made an important contribution and garden hedgerows are a feature of suburban Vancouver gardens, often consisting of tall well manicured conifers:

I think my views concerning hedgerows are influenced by my everyday appreciation of walking outdoors and my being able to enjoy the landscape, and the natural vistas that the area that I live in provides. [Canada9:125-127]

Like the English respondents, these urban hedges were felt to be important and brought the 'countryside' into the towns. Diversity was also felt to be an important feature of the urban hedge.

I like seeing hedgerows with flowers and things like that in the urban hedgerow and I like to seeing the different ones out there rather than just conifers, like rose hedgerows, I love those. [Canada 1: 130-132]

I like hedgerows in this area because they represent a diversity in city planning and in a rural area they are interesting because there are different shrubs and trees involved in hedges and one can see if one bothers to look at the, how they are formed and cover used by wildlife. [Canada9 69-71]

As with the English respondents, garden hedgerows were loved particularly for the bird life they attracted:

I have a cedar hedge close to my house that is known as the 'birds condo'. It offers the birds protection while they are about their feeding frenzy. [Canada9: 34-36].

Also, in common with the English data, there was concern over large conifer hedgerows round gardens. People did not like them to grow too tall, blocking light and creating shade. They mentioned that they could be a traffic hazard and particularly disliked hedges that were cut at 'wrong' times of the year or that were badly managed such that they went brown. It was generally felt that an urban hedge should be maintained tidy and neat.

Urban hedgerows, and trees, also appeared to fulfil a similar role to that of the rural and urban English hedgerows as part of memories of childhood play:

Not coming from a farm area, because I was brought up in the city, hedges were a lot of fun because they were a good place to hide. I imagine the hedgerow on a farm to be much the same. [Canada1:231-232]

9.3.4.2 Hedgerows as *English* landscape features

Many of the respondents viewed hedgerows as 'English' landscape features, for example:

However, I consider hedgerows and hedges an integral part of the English, British Isles landscape and in areas of Europe.....[Canada10:123-125]

For one farmer the British landscape represented his definition of what landscape was:

Farmer:..... if I go to Britain, I find that that's landscape, beautiful rolling fields, hedgelines trees here and there, you might find the odd stream through it. I mean that's almost as beautiful as walking into a garden, they are like large gardens. And a bare field as we talked about doesn't really offer much. Some people thinks it's the most beautiful thing, I find that very boring, but with the tree mix, the different colours, that's landscape. In my opinion. [Canada2:217-222]

This farmer also commented on the way he considered English farmers to be 'gardening'. As with the English farmers, he appreciated a hedged landscape elsewhere and particularly liked rolling countryside. However, on his own farm hedgerows were limited to areas of the farm where they could be viewed from the farm house and stock fields and odd corners of land where they did not interfere with crops.

Several Canadian respondents described the English landscape as like a 'garden' There was also mention of images of landscape from the children's stories of the author Beatrix Potter where a quintessential English landscape is depicted:

I can't remember any hedgerows from my childhood except maybe from Beatrix Potters books like Mrs. Tiggywinkle and Benjamin Bunny and, well they're rather passed in my memory, but those books featured a lot of hedgerows with all the little animals living in them. [Canada9 120:122]

9.3.4.3 Hedgerows as '*natural*' features

Hedgerows were felt to be important whether they had grown up naturally or been planted. As with the English respondents hedgerows were felt to represent a 'natural' feature in the landscape and many hedgerows in Canada are 'natural' features in that they grew up along fence lines rather than being planted:

The more natural look as opposed to fencing. [Canada7: 19-20]

They give contour to the land . They are a normal part of the landscape and they'd be missed because they are wild, or they look wild. [Canada9:115-118]

9.4. INFORMING THE ENGLISH STUDY

As mentioned earlier, these findings are presented rather tentatively, particularly as it has not been able to set them within the context of a wider view like the English data. However, this study offers some interesting contrasts with the way that people with a different cultural background consider hedgerows and approach the difficulties of re-establishing a hedged landscape.

Many aspects of the Canadian data were similar to those found in the English data. For example, farmer concerns over hedgerows, feelings of being misunderstood, and a feeling of lack of recognition for what they do. As in England, the experts felt that education of farmers and the public on environmental issues was required. Interestingly the way that hedgerows provided a human scale to the landscape was also important for several of the Canadian respondents. There were also many similarities in the way people felt about hedgerows aesthetically and visually. The Canadian public respondents particularly appreciated the hedgerows that were local to them and that they saw while out walking. They also particularly valued their urban hedgerows and those around their homes. Like the English data, there was also evidence that expert advice and encouragement had increased farmers' awareness and enthusiasm for wildlife conservation, particularly for birds. However, there were also some very obvious differences.

In common with the English respondents, trust and relationship building were found to be very important. However, farmers in Canada were actively involved in the work of the Trust at all levels of the decision making processes and were treated as 'partners-in-stewardship'. Although I detected some scepticism about this among some of the people I spoke to, the philosophy was to treat them as equal partners, and for the farmers I spoke to this appeared to have been a successful approach. As with the English farmers the Canadian farmers were concerned to be treated equally and for their need to run a business to be respected.

The most revealing aspect of the Canadian data was the way that it highlights the importance of the cultural aspects of hedgerows in England. While the Canadian perspective possesses many aspects which are similar to those of the English

perspective, it lacks an extra dimension. The aspects representing the commonality found within the English data, such as hedgerows as part of the English sense of place and landscape history, are not present in the Canadian data in the same way. The Canadians did not possess a common cultural view of hedgerows. Although the Canadian respondents found hedgerows important for their visual, aesthetic and wildlife aspects, the feelings of heritage and strong sense of place and landscape character, which are associated with English hedgerows, were missing. The consequence of this was evident in the way that the DWFT felt compelled to assume responsibility for the whole process of establishing hedgerows and to care for them for the first 5 years of their life. In contrast the cultural factors operating in England mean that incentives are sufficient in many cases to encourage hedgerow planting and management. Further, many English farmers' are currently caring for their hedgerows with no financial assistance and little recognition of the work they do.

Cultural differences are also able to throw light on other English perceptions regarding hedgerows. For example, within the evidence put before the Select Committee (House of Commons, 1998a,b,c.) and responses to the DOE /DETR concerning hedgerows, there was an overwhelming prevailing perception of fences as being unacceptable as field boundaries, i.e. hedgerows are necessarily a planted landscape feature. However, in many parts of Canada and also the USA, hedgerows have grown up as a result of the fence lines, rather than being planted, to become a valuable component of the landscape. With appropriate field margin management fences could be important field boundaries in England, contributing to the visual landscape and providing wildlife habitats.

The evidence from the Canadian study also calls into question the English perception of the need for continual hedgerow management. The Canadian respondents, for example, were incredulous at the way English farmers felt that they had to be constantly trimming their hedgerows. The Canadian farmers response to our English hedged landscape was that English farmers were "gardening". They were amazed by the English landscape and the English farmers. They found it hard to understand why we should go to such lengths to manage and protect our hedgerows because, in Canada, the cultural significance was lacking. In many respects the Canadian example provided a demonstration of how things might be without the cultural aspects portrayed within the English data. Rather than being appalled by their loss, it could be argued that it is amazing that we still have

any hedgerows. This study suggests that much of why we still have them has to do with these deeper embedded cultural feelings towards them.

While much of what was presented in the different English categories' perspectives may be considered to represent a snapshot in time, the deeper cultural perspective represents continuity through time or an on-going cultural view which runs through more than one generation. However, not only is the importance of these cultural aspects evident from the approaches taken to hedge management today but they also have implications for the way in which we manage hedgerows for the future. For example, this study suggests that the contribution to sense of place felt by English farmers may not be felt by absentee landlords or by farm management companies who may have little contact with the farm and its surrounding landscape. Further, absentee landlords from a different country and hence culture may not possess the same feelings of duty, responsibility and heritage.

This section has only given a brief look at the differences between two cultures in their perceptions of hedgerows and their management. Little cross cultural research has been attempted in this area and this short study suggests that there is much to be gained from cross-cultural exchange. The next chapter presents the conclusions of this research and also highlights further areas of study which may also be worthwhile exploring.

CHAPTER 10

CONCLUSIONS

“Sometimes England strikes you round the head like a cheap religious experience or a jolt of lust. Just now the cow parsley spins and spills along these border lanes under the shade of the may blossom like a good dream, and I am riding it with the carelessness of a dreamer. These greedy eyes that cannot look enough are mine as a child, wading chest-high in cow parsley, the feathery leaves delicately brushing the skin of my lips and eyelids, and white coronets of tiny flowers smelling mustily familiar of something much older than me. The countryside is reduced down to just white clouds held by hawthorn branches and a million white flowers gathered in one glance along a line of cow parsley, with everything else in this piece of world a hundred tones of damp, glowing green. I do not believe there is a more beautiful sight on the planet. But only a ghost of this can be stored in our memories, which is why, every spring, these moments expand out so astonishingly, catching our knowing weariness so completely by surprise. “ Montagu Don (Gardening section of the Sunday newspaper, The Observer, Life, 24 May 1998).

Within this research I have attempted to portray in peoples' words the whole of the relationship that people have with hedgerows. However, it is difficult to capture the whole of a person's relationship with only words. That the people who took part in this research also experienced this difficulty was evident from the way they found it so difficult to articulate what they felt about hedgerows. For me the above quote, from the gardening section of a Sunday newspaper, captures the subjective, emotional view of the countryside held by people, which is no less important than the objective and rational assessment portrayed in the academic literature.

Echoes of these words can be found throughout the data. Hedgerows were frequently described with great emotion and what I found most surprising about this research was the depth of feelings that people had for them. Almost everyone that I spoke to about my research, regardless of their background, had a 'story' to tell

about a hedge they knew. Often they would appear to be unaware themselves of what they felt until it was evoked. This was particularly true of those I spoke with who had not previously thought much about the topic.

In this chapter I present a summary of the research findings and comment on the research process. Section 10.1 presents the essence of each chapter, section 10.2 reports on the methodology used and section 10.3 offers suggestions for future research.

10.1 SUMMARY OF THE RESEARCH FINDINGS

In Chapter 1 I set out the background and structure of the research and introduced my initial research question, 'What relationships do different groups of people have with hedgerows?' This chapter highlighted the growing interest in participatory research and recognition of the need to integrate the scientific and social aspects of landscape. I commented that the aim of this research was to consider landscape in a more holistic way and to include the perspectives of all those who may be viewed as having a stake in hedgerows. I further commented on the way that the research also represented a personal journey and that as a researcher I did not divorce myself from the research process.

In chapter 2 hedgerows were considered as features of the English cultural landscape. I examined the way that the word hedgerow was difficult to define as it is a culturally defined concept and would therefore mean different things to different people. I briefly considered the history of the hedgerows that gave rise to the hedged English landscape we see today and current concerns over hedgerow loss.

Chapter 3 was concerned with the theoretical framework for this research. I commented further on the way that people working in the field of landscape, and the environment generally, are increasingly becoming aware of the need to integrate the human with the scientific aspects. I noted that Landscape Ecology has been heralded as a way of bringing together the culture and the science when considering landscapes. However, I claimed that conventional positivist approaches are inadequate for dealing with the 'real' world 'messy' issues involving humans and their environment. This chapter introduced the concept of systems and illustrated the way that systems approaches may offer a means for taking a more holistic approach. In particular the 'softer' systems approaches to research

were presented as a means for a more inclusive research strategy. Systems approaches are by their nature participatory and I noted that there is currently much interest in such techniques. I presented these methodologies as one way of involving many different stakeholders perspectives and of bringing together the different aspects of landscape. I also commented on the way that within this research all perspectives are treated as being equally important.

Chapter 4 discussed the research process and described the data collection. I commented on the way that research on landscape perceptions had tended to focus on quantitative rather than qualitative approaches, viewing landscape as something separate from us, and tended to consider different aspects of landscape in isolation. I further commented on the way that within this research I wished to consider people in the 'real world setting' and was concerned with researching in-depth human relationships with landscape. I discussed the importance of relationships, rather than values, within this research which is a broader concept encompassing the way we interact and engage with our environment of which we are an integral part. This chapter set out the requirements of the research strategy and noted that the data should as far as possible be allowed to speak for themselves. A qualitative rather than a quantitative approach was considered to be more appropriate for this type of study. I introduced grounded theory as a systemic methodology that fitted in with the theoretical framework behind the research. I then discussed the data collection for the publics', farmers' and experts' perspectives and commented on the way the data were analysed using computer software.

Chapter 5 presented the publics' group perspective. It demonstrated the way that a wider questionnaire survey did not reveal the richness of people's relationships with hedgerows found within the in-depth interview data. I discussed the relationship that the public category had with hedgerows and with others and commented on the way the publics' relationship with hedgerows encompassed a complexity of subjective, unquantifiable qualities. This chapter explored the way that people experienced hedgerows and had a relationship with them and the way they viewed hedgerows in their landscape context and did not separate out the different aspects of hedgerows. I noted that for this category all hedgerows were felt to be important, but particularly their garden and urban hedgerows and those in the wider countryside.

Chapter 6 detailed the farmers' perspective. It noted the way that farmers were balancing their role as a business person with their perceived role as custodians of the land. I commented on the importance of emotional attachments and the way farmers held a view similar to that of the publics concerning hedgerows in their landscape context, but that their view was different when they considered them in the farming context. I noted that farmers were becoming more aware of their public image and that they felt their efforts went unrecognised. I commented on the way that they were aware of the importance others attached to hedgerows, but for a variety of reasons felt unable to manage them as advised. This chapter also noted that farmers were frequently unaware of the detail of hedgerow management for wildlife conservation and that trust and recognition were important categories within the farmers perspective. I concluded that possessing a rational or economic view of hedgerows did not mean that farmers did not care, rather that their view of farming as a business was allowed to dominate their perspective.

Chapter 7 presented the experts' perspective and noted that while the expert category represented a broad range of interests, the main focus had been on the ecological importance of hedgerows and on improving biodiversity in the landscape. For this important hedgerows were those of particular ecological or historical value, the 'special' and the rare. I commented on the way this category was found to separate out the different aspects of hedgerows and that although experts also held the view of landscapes as part of our culture and heritage and valued them for their ephemeral and aesthetic aspects, their view was dominated by the need to be objective.

In chapter 8 I drew together the different categories' perspectives and considered the similarities and differences in peoples' relationships with hedgerows. I discussed the common boundaries drawn from the similarities in peoples relationships with hedgerows and examined those that were different. Drawing on the higher categories or themes within the data I noted that pride in our English landscape, and a sense of place and connection with our hedged landscape were common boundaries, and that images of the landscape were formed through experience of it. This chapter concluded that the drawing of emotional and rational boundaries resulted in different relationships with hedgerows. However, although there were many differences between the categories and people did not necessarily possess a shared language, there was also much common understanding. I noted that there was little opportunity for the categories'

perspectives to come together and that there were ways, for example, through demonstrations of caring for the landscape and the concerns of others, that people's views could come together. I drew on the implementation of the 1997 Hedgerow Regulations as an illustration of how the subjective aspects of peoples relationships had been neglected and the experts' perspective has been allowed to dominate.

Chapter 9 presented a contrasting cultural study. It detailed evidence from data collected in Delta, Canada, which was used to inform the English study. Many aspects were similar to the English study, for example the way that people felt about urban and garden hedgerows, the way farmers felt misunderstood and the way that people experienced the landscape. However, I also noted distinct cultural differences, highlighting the way that hedgerows are cultural landscape features. These differences had influenced peoples approach to hedgerow conservation and demonstrated the importance of the feelings of heritage and sense of place found within the English data.

Any system for managing hedgerows is dependent on the relationships within it and this research has drawn out these aspects. A re-occurring theme has been the overemphasis on the rational and objective rather than the emotional and subjective aspects of landscape and peoples' relationship with it. The result has been a domination of one group of stakeholders perspective. The subjective and emotional part of peoples' relationships with hedgerows affects not only the way they are managed and hence the type of hedged landscape further generations will inherit, but also the relationships that people have with each other. The importance of the subjective aspects of hedgerows and the emotional attachments were evident in the data across all categories. However, for many of the expert category this subjectivity appears difficult to grapple with.

This research has highlighted the way that there were both personal and group boundaries to the system of interest. That the wider group view, represented in this study by the views of national bodies such as the National Farmers Union, or the Wildlife trusts, the academic literature and a wider questionnaire survey, portray only a partial view of the relationship that people have with hedgerows. Therefore, any consultation process that only involves the wider group view will lose the depth and richness of individual views. Certain stakeholders (see table 4.3, section 4.2.1.1) have had a greater degree of influence over hedgerow policy and management than others. Wildlife conservation researchers have been particularly

influential in determining where the system boundaries should be drawn and in consequence there has been a focus on hedgerows for improving biodiversity within the English landscape.

Although attitudes among experts are changing, as Warburton (1998) notes “most development and conservation work is still done conventionally, in an expert-dominated, externally-driven and exclusive manner.” The consequence of such an approach in this case is that there is a richness and complexity of relationships between people and hedgerows that current hedgerow policy and protection is not addressing. Both the public and the farmers within this research were found to lack a sense of ownership over the process of change. Lay people in rural and urban communities have little say in current landscape management practices, yet they may be considered as key stakeholders in the current debates about hedgerow management practices which are determining our cultural landscapes for the future. Further, although within the hedgerow legislation discourse there has been much mentioned about how more power may be given to Local Authorities through primary legislation amendments, there has been little mention of how ordinary members of the public may be able to influence decisions about important hedgerows.

In this research the emphasis has been on relationships, although the idea of stakeholder analysis has also been drawn on. The findings suggest that ‘stakeholder analysis’ may not necessarily be an appropriate method for identifying what is important and to whom as it may be perceived as an economic term, suggesting that the environment has an economic value with people having only a direct or indirect stake. Relationship analysis may therefore be a more appropriate term as it encompasses many different values.

The initial question - What relationships do different groups of people have with hedgerows? - has been answered by the words of the people themselves. From these words I conclude that current expert emphasis has lain with that which can be objectively or rigorously measured resulting in the exclusion of part of the relationship that all groups have with hedgerows, but particularly that of members of the public. If landscape is to be considered in a holistic way, as many suggest, both the objective and subjective perspectives need to be included and presented in such a way as to be considered of equal importance.

10.2 REVIEWING THE METHODOLOGY

There will “never be a single (testable) account of a human activity system, only a set of possible accounts all valid according to a particular Weltanschauungen” (world view) (Checkland, 1981)

In common with other systems approaches (for example, McClintock, 1995), this research has not been about how to try and change peoples understandings but about the need to create space for new or different understandings to emerge. Hedgerows are viewed in terms of the relationships that we have with them and hedgerow management in terms of a ‘human activity system’, rather than in terms of different groups having competing interests which cannot be met. The approach taken has demonstrated one way of bringing together different groups’ views.

The value of a systems approach to research is that it is an inclusive way of carrying out research. By including the relationships and hence values, of all stakeholders it necessarily includes the different aspects of hedgerows that people value. This research was designed as an in-depth rather than an extensive study and consequently I feel it has been able to capture some of the richness of peoples’ relationships with hedgerows. Rather than attempt to attach some kind of numerical or statistical value to the subjective and therefore difficult to quantify aspects of landscape, this research has presented evidence through people’s own words. However, taking a wider view has enabled the in-depth views to be placed in the context of a wider group view and served to inform the interview data. It has also highlighted the way that the group perspective represented only a partial view of peoples’ relationships with hedgerows and each other.

Systems approaches are designed to cope with messy situations and as a systemic approach, grounded theory offered a good method for dealing with both the subject and the different kinds of data. Its generative nature, producing multiple ‘theories’, was particularly useful for the public perspective where there was little existing academic theory specifically relating to hedgerows. In the past the trend has been for researchers to deal in the wider perspective, offering higher formal theories, while practitioners, i.e. those actually living or working with people in the environment, are dealing with individual perspectives and need practical advice. In this respect grounded theory offers the potential to bring the theory and practice closer together.

However, grounded theory is not an easy approach for an inexperienced researcher to take. It is a messy process and trying to deal with large amounts of unstructured data is difficult. In this respect NUD*IST was found to be invaluable, providing a framework for structuring the data. Further, one of the strengths of the scientific method is the way that it attempts to detail how the research was conducted and present the data on which the findings are based. These aspects are an apparent weakness in much qualitative research. In this respect grounded theory and the use of NUD*IST strengthened the validity of the research by providing a rigorous method for analysis and by producing a trail of evidence for the arguments. However, the main disadvantage of using such software is the way, as demonstrated by Appendix 9, that the data become fragmented as text is taken out of its original context. In this study I did not perceive this to be much of a problem as the number of people I had interviewed was such that I was able to retain in my mind who they were, what they were like and what things they had said. However, with a much larger data set and with more than one person working on a project, this could be more of a problem.

10.3 FURTHER RESEARCH

In the previous section I commented on the way that this research was designed to be generate ideas and issues and not a final end product. The nature of grounded theory is that it is generative and an on-going research process. Some of the research findings have also been written up as papers for publication and presented at academic conferences (Oreszczyn, 1999; Oreszczyn and Lane 1999a and b), however, there were many avenues that were not pursued within the research because of limited time and not all the data collected for this research has been placed in the thesis. For example, for one area of investigation triggered by the grounded theory process I collected 200 children's drawings of hedgerows with a view to considering childhood images of hedgerows and the countryside. Reviews of the hedgerow legislation being implemented at the time of producing the thesis, were also omitted, as was any lengthy discussion on how this research relates to the extensive literature on landscape generally. Given more time the following are significant areas that could be pursued:

-
- A particularly neglected aspect identified by this research is the importance of garden and urban hedgerows, both to people and wildlife. This is an area where further research would be valuable, especially as there is currently much concern over the use of inappropriate garden hedgerows.
 - This study represents a snapshot in time. It presents images of hedgerows in the present. The past perceptions of hedgerows by the different groups has only been hinted at, and placing the present perspective detailed here in the context of perspectives from the past would be another area for study.
 - As a single researcher working within the constraints of a PhD I was only able to collect relatively small samples and within a limited area of the country. Further work covering more farmers and from different areas of the country would possibly highlight further regional differences.
 - The data collection for the Canadian study was very limited and further data collection would strengthen this perspective. The study, indicated that further work on cross-cultural aspects of landscape could be beneficial. It also indicated that experts from Canada, such as those advising the farmers, would benefit from cross-cultural exchange visits.
 - Originally this research set out to consider an easy to use hedgerow assessment method for non-experts. It was felt that such a tool would enable farmers to judge for themselves what they were doing, provide a means for encouraging conservation awareness and promote appropriate management of hedgerows. It would also involve the farmers and local people in the research process by providing an informal way of monitoring the wider countryside. This remains an area worthy of further investigation as comments from experts and farmers within this research suggests that such a tool would be welcomed.

10.4 FINALLY

As I present myself as part of this research rather than a detached observer, I have deliberately attempted not to write this PhD in a detached way. As the accessibility of research to other disciplines and lay people has also been a theme of this thesis, I have therefore also attempted to write in a way that I hope will be understandable by a researcher from any discipline or an experienced lay person.

Hodge (1995) has noted the difficulties of doing PhDs such as this one, in what he calls the 'New Humanities'. He comments that "the central characteristic of the New Humanities is that it refuses this system of disciplinarity. It deconstructs its taken-for-grantedness, the unquestioned sense that the boundaries around the existing disciplines are inherent features of knowledge." On PhDs in the New Humanities he comments that "typically (from the point of view of these [traditional single-discipline PhD research] criteria) they are over ambitious, they lack unity, they lack objectivity, they are 'creative', they are difficult to assign to a single disciplinary pigeon-hole, they are excessively concerned about their own conditions of production and they are strenuously, complexly written". This research probably fits all of these characteristics.

However, within this research I have attempted to set out what I have done and my thinking behind it. I have tried to put into practice what I felt many people across the disciplines were advocating as the way forward, to link together theory and practice in a way that is actually useful in the 'real' world and which adds something to peoples perspectives on landscape management. Inevitably doing so has also changed my own perspective. Doing this research has frequently left me feeling swamped by the literature as a result of delving into so many different disciplines. I am left with a feeling that much has been omitted or overlooked and that I have only a barely adequate grasp on what I am trying to say. The more I read and talk with people, the less I feel I know as I begin to appreciate what there is to know about other disciplines and 'worlds'. I do not therefore view this piece of research as representing a final fixed piece of work, rather, despite its flaws, it is a foundation on which to base further exploration. Further, the initial question concerning peoples relationships with hedgerows can never be given a fixed and final answer as peoples' relationships are ever changing. What I have presented here is my perspective of peoples' relationships at a given point in time.

REFERENCES

A

- Adams, W. A. (1996). *Future Nature: a vision for conservation*. Earthscan, London.
- Appleton, J. (1996). *The Experience of Landscape* (Revised edition). John Wiley and Sons, Chichester.
- Araujo, L. (1995). *Designing and Refining Hierarchical Coding Frames*. In Kelle, U. (ed.)(1995) *Computer Aided Qualitative Data Analysis*. Sage Publications, London. 96-104.

B

- Bahr, R. and Fahrig, L. (1998). *Local vs Landscape Effects of Woody Field Borders as Barriers to Crop Pest Movement*. Conservation Ecology [online] Vol. 2 (2):3.
[URL:http://www.consecol/vol2/iss/art3](http://www.consecol/vol2/iss/art3)
- Bailey, C. White, C, and Pain R., (1999). *Evaluating qualitative research: dealing with the tension between 'science' and 'creativity'*. Area, **31.2**, 169-183.
- Baldock, D and Mitchell, K. (1995). *Cross-Compliance within the Common Agricultural Policy. A Review of Options for Landscape and Nature Conservation*. Institute for European Environmental Policy, London.
- Barr, C. J., Britt, C. P. and Sparks, T. H. (1995). *Hedgerow Management and Wildlife*. ITE/ADAS report to MAFF unpublished.
- Barr, C. Gillespie, M. and Howard, D. (1993). *Hedgerow Survey 1993*. Institute of Terrestrial Ecology, Merelwood. unpublished report for the DOE.
- Barr, C. J. and Parr, T. W. (1994). *Hedgerows: Linking Ecological Research and Countryside Policy*. In Watt, T. A. and Buckley, G. P. (eds.) Hedgerow Management and Nature Conservation. Wye College Press, University of London.
- Barret, G. W. and Peles, J. D. (1994). Optimising habitat fragmentation: an agrolandscape perspective. Landscape and Urban Planning, **28**, 99-105.
- Bartram, H. (1997). *Hedgerows Hanging in the Balance*. ECOS **18 (1)** 1997 p95.

-
- Bateman, I. J. and Diamand, E. Langford, I. H. and Jones, A. (1995). *Household willingness to pay and farmers willingness to accept compensation for establishing recreational woodland*. Jnl. of Env. Plan. and Man. **39(1)**, 21-43, 1996.
- Battershall, M. R. J. and Gilg, A. W. (1996). *New Approaches to Creative Conservation on Farms in South-west England*. Journal of Environmental Management. **48**, 321-340.
- Battershall, M. R. J. and Gilg, A. W. (1996a). *Environmentally Farming in South West England: An exploration and analysis*. In Curry, N. and Owen, S. (eds.) (1996) *Changing Rural Policy in Britain : Planning, Administration, Agriculture, and the Environment*. The Countryside Community Press, Cheltenham, UK.
- Baudry, J. (1989). *Interactions between agricultural and ecological systems at the landscape level*. Agriculture, Ecosystems and Environment, **27**: 119-130.
- Baxter, J. and Eyles, J. (1999). Prescription for research practice? Theory in qualitative evaluation. Area vol. **31**, No.2., No.2.
- Baxter, J. and Eyles, J. (1997). *Evaluating quality research in social geography: establishing 'rigour' in interview analysis*. Trans. Inst. Br. Geogr NS 505-525 1997.
- Beedell, J. D. C. and Rehman, T. (1996). *Farmers' perceptions of conservation and provision of advice on the management of the countryside*. Agri. Progress, **71** 26-35
- Beedell, J. D. C. and Rehman, T. (1996a). *A Meeting of Minds for farmers and Conservationists*. IAM Journal, Vol. **9**, No. 6, Summer 1996.
- Bertalanffy, Ludwig von, (1968) *General Systems Theory*. Braziller, New York.
- Boatman, N. D., Blake, K. A., Aebischerr, N. J., Sotherton, N.W., (1994). *Factors affecting the herbaceous flora of hedgerows*. In Watt, T. A. and Buckley, G. P. (eds.) *Hedgerow Management and Nature Conservation*. Wye College Press, University of London.
- Boatman, N. D. and Wilson, P. J. (1988). *Field edge management for game and wildlife conservation*. Aspects of Applied Biology, 16.
- Brandle, J. R. and Hintz, D. L. (1988). *Review of Windbreaks*. Agriculture in Ecosystems and Environment Special Issue - Vols. **22** and **23**, 1988.
- Brassley, P. (1998) *On the Unrecognised Significance of the Ephemeral Landscape*. Landscape Research, **Vol, 23** No. 2, 1998.
-

-
- Bunce, R. G. H., Howard, D. C., Hallam, C. J., Barr, C. J. and Benefield, C. B. (1993). *Ecological Consequences of Land use Change*. Institute of Terrestrial Ecology.
- Burel, F. (1996). *Hedgerows and their role in agricultural landscapes*. Critical Reviews in Plant Sciences. **15**, 2, 169-190.
- Burel, F. and Baudry, J. (1995). *Social, aesthetic and ecological aspects of rural landscapes as a framework for greenways*. Landscape and Urban Planning **33**: 327-340.
- Burel, F. and Baudry, J.(1995a). *Species biodiversity in changing agricultural landscapes: A case study in the Pays d'Auge, France*. Agriculture, Ecosystems and Environment **55**: 193-200.
- Burel, F. and Baudry, J. (1994). *Control of biodiversity in hedgerow network landscapes in western France*. In Watt, T. A. Buckley, G. P.(eds.) *Hedgerow Management and Nature Conservation*. Wye College Press.
- Burgess, J. (1982) *Filming the Fens: a visual interpretation of regional character*. In Gold, J. and Burgess, J. (eds.) (1982) *Valued Environments*. George Allen and Unwin, Ltd., London.
- Burgess, J. Harrison, C. and Filius, P. (1995). *Making the Abstract Real: A cross-cultural study of public understanding of global environmental change*. University College ,London.
- Burgess, J. Limb, M. and Harrison,C. (1988a). *Exploring environmental values through the medium of small groups:1. Theory and practice*. Environmental Planning A 1988, **Vol. 20**. pp.309-326.
- Burgess, J. Limb, M. and Harrison, C. (1988b). *Exploring environmental values through the medium of small groups:2. Illustrations of a group at work*. Environmental Planning A 1988, **Vol. 20**. pp.457-476.
- Burgess, J. and Gold, J. (1982). *On the Significance of valued Environments*. In Gold, J. and Burgess, J. (eds.) (1982) *Valued Environments*. George Allen and Unwin, Ltd., London.
- Burt, R. and Archer, J.M. (eds.) (1994). *Enclosure Acts: Sexuality, Property, and Culture in Early Modern England*. Cornell University Press, London.

C

- CAG Consultants (1997). *What Matters and Why. Environmental Capital: A New Approach*. Report to Countryside Commission, English Heritage, English Nature, Environmental Agency, August 1997. Countryside Commission, Cheltenham.
- Cambridgeshire County Council Rural Group (1993) *Discovering Cambridgeshire Hedgerows*. Cambridgeshire County Council, Cambridge.
- Cambridge, W. (1845). *On the advantage of reducing the Size and Number of Hedges*. Journal of the Royal Agricultural Society of England. **6**, 333-342.
- Capra, F. (1996). *The Web of Life: a new synthesis of mind and matter*. HarperCollins Publishers, London.
- CAQDAS Networking Project, ESRC Data Archive. <http://www.soc.surrey.ac.uk>
- Carr, S. (1988). *Conservation on Farms: Conflicting Attitudes, Social Pressures and Behaviour*. The Open University, Unpublished PhD Thesis.
- Carr, S. and Bell, M. (1991). *Practical Conservation: Boundary Habitats*, Hodder and Stoughton, London.
- Carr, S. and Tait, J. (1991). *Differences in the attitudes of farmers and conservationists and their implications*. Journal of Environmental Management **32**, 281-294
- Chambers, R. Pacey, A. and Thrupp, L. A. (1989). *Farmers First: Farmer Innovation and Agricultural Research*. Intermediate Technology Publications, London.
- Chapman, J. and Sheail, J. (1994). *Field Margins - an historical perspective*. In Boatman, N. Field Margins: Integrating Agriculture and Conservation. BCPC Monograph **No. 58**. 1994.
- Charmaz, K (1994). *"Discovering chronic Illness: using Grounded theory*. In Glaser, B. G. (1994). *More Grounded Theory Methodology: A Reader*. Sociology Press, CA. USA. Avebury studies in Green Research, Avebury, Aldershot.
- Checkland, P.B (1997.) *Systems*. In Warner (ed.). International Encyclopaedia of Business and Management. Thompson Business Press.
- Checkland, P.B (1994). *Conventional Wisdom and Conventional Ignorance: The revolution organisation theory missed*. Organisation. **Vol1(1)**, 29-34

-
- Checkland, P. B. (1981). *Systems Thinking, Systems Practice*. John Wiley Ltd., 1981
- Checkland, P. B. and Haynes, M. G. (1994.) *Varieties of systems thinking: the case for soft systems methodology*. System Dynamic Review Vol.10. Nos.2-3, 189-197.
- Checkland, P. B. and Scholes, J. (1990). *Soft Systems Method in Action*. Wiley New York.
- Clements, D. K. and Tofts, R. J. (1992). *A Methodology for the Ecological Survey, Evaluation and Grading of Hedgerows*. Test Draft. Countryside Planning and Management.
- Clifford, S. and King, A. (1993). *Local Distinctiveness - Place, Particularity and Identity*. Common Ground, London.
- Cloke, P. (1997). *Country Backwater to Virtual Village? Rural studies and 'The cultural Turn'*. Journal of Rural Studies. Vol. **13**, No.4 pp367-375.
- Coeterier, J. F. (1996). *Dominant attributes in the perception and evaluation of the Dutch landscape*. Landscape and Urban Planning, **34**, 27-44.
- Coeterier, J. F. and Dijkstra, H. (1976). *Research on the visual perception, and appreciation of and visual changes in a hedgerow landscape*. Landscape Planning, **3**, 421-452.
- Collins (1982). Dictionary
- Community Projects Ltd., (1997). *The Delta Map Guide and Business Directory*. Community Projects Ltd, Tsawwassen, B.C.
- Cook, P. S. and Cable, T.T. (1995). *The scenic beauty of shelterbelts on the Great Plains*. Landscape and Urban Planning **32**: 43-54.
- Corbet, S. (1995). *Invertebrates in Hedgerows*. In Barr, C. J., Britt, C. P. and Sparks, T. H. (1995) *Hedgerow Management and Wildlife* ITE/ADAS report to MAFF unpublished.
- Corbin, J. and Strauss, A. (1990) *Grounded Theory Research: Procedures, canons and evaluative criteria*. Qualitative Sociology, Vol. 13, No.1.
- Countryside Agency (1999). *The State of the Countryside 1999*. The Countryside Agency Postal Sales, Northampton.

-
- Countryside Commission (1998). *Participatory Action in the Countryside: A Literature review*. **CCWP 07**
- Countryside Commission (1997). *Agricultural Landscapes: A Third Look*. **CCP 521**
- Countryside Commission (1997a). *Public Attitudes to the Countryside*. **CCP481**
- Countryside Commission (1996). *The Countryside Stewardship Scheme Application Pack*. MAFF **PB 2505**.
- Countryside Commission. (1995). *Countryside Stewardship Handbook*. **CCP 453**.
- Countryside Commission (1994). *The New Map of England: A Directory of Regional Landscapes. (Results of a pilot study in South Western England)*. **CCP 445**.
- Countryside Commission. (1993). *Landscape Assessment Guidance*. **CCP 423**.
- Countryside Commission (1993a). *Paying for a Beautiful Environment*. **CCP 413**.
- Countryside Commission (1992) *Enjoying the Countryside: Policies for the People*. **CCP 371**.
- Countryside Movement. (1995). *Our Charter*. London. SW1P 3QB
- Cox, G., Watkins, C. and Winter, M. (1996). *Game Management in England: Implications for public access, the rural economy and the environment*. Rural Research Monograph, Series Number 3. The Countryside Research Unit Cheltenham and Gloucester College, Cheltenham.
- Cumins, R. P., French, D., Bunce, R. G. H., Howard, D. H. and Barr, C. J. (1992). *Diversity in British Hedgerows*. (ITE). Department of the Environment, London.

D

- David, S. (1995). *What do farmers think? Farmer evaluations of hedgerow intercropping under semi-arid conditions*. *Agroforestry Systems*, **32** 15-28, 1995.
- Denzin, N. K. (1997). *Interpretative Ethnography: Ethnography Practices for the 21st Century*. Sage Publications, London.
- Department for International Development (DFID), (1999.) *The Systems approach in the Natural Resources System Programme*. March 1999. DFID, 94 Victoria Street, London.

Department of the *Environment Transport and the Regions (DETR)* (1998). *Review of Hedgerow Regulations 1997*. Department of Environment, Transport and the Regions, June 1998, London.

Department of the Environment (1997). *The Hedgerow Regulations 1997*. SI1997/1160. DOE1007. HMSO, London.

Department of the Environment (1997a). *Analysis of responses to the consultation on the draft regulations and joint consultation paper*. Environmental Resources Management, Report to the Department of the Environment London. February 1997.

Department of the Environment (1997b). Department of Environment Press release – 192, 29th May 1997.

Department of the Environment / WO/MAFF (1996). *Protection of Important Hedgerows: Joint Consultation Paper*. Department of the Environment, The Welsh Office, Ministry of Agriculture, Fisheries and Food. October 1996.

Department of the Environment (1996a). *Indicators of Sustainable Development for the United Kingdom*. Department of the Environment, March 1996, HMSO, London.

Department of the Environment (1996b). *The Hedgerow Evaluation System: A contract report by ADAS for the Department of the Environment*. October 1996, HMSO, London.

Department of the Environment /MAFF, (1995). *“Rural England - A nation committed to a living countryside”* Government White Paper **17**. Department of the Environment/Ministry of Agriculture Fisheries and Food, October 1995 HMSO.

Department of the Environment (1995a). *Environment Act 1995*. 1995 Chapter 25, Department of the Environment, HMSO, London.

Department of the Environment (1990). *This Common Inheritance -Britain's environment strategy. Environment White Paper*. Department of the Environment HMSO, London.

Dey, I. (1995). *Reducing Fragmentation in Qualitative Research*. In Kelle, U. (ed.) (1995) *Computer Aided Qualitative Data Analysis*. Sage Publications, London. pp. 69-79.

Doubleday, O. P., Clark, A. and McLaughlin, (1994). *Hedges - A farmers view*. In Field Margins: Integrating Agriculture and conservation. BCPC Monograph **No. 58**. 377-384.

Dover, J. W. (1991). Chapter 12. In Collins, N. M. and Thomas J. A. *Conservation of Insects and their habitats*. Academic Press Ltd., London.

Dowdeswell, W. H. (1987). *Hedgerows and Verges*, Allen and Unwin, Hempstead.

Dwyer, J. (1994). *An Overview of UK policy and grant schemes*. In Boatman, N. (ed.), BCPC Monograph **No.58**: Field Margins: Integrating Agriculture and conservation. 359-365.

E

Edwards, D. (1997). *Discourse and Cognition*. Sage Publications, London.

Edwards-Jones, G., Edwards-Jones, E. S. and Mitchell, K. (1994). *A comparison of contingent valuation methodology and ecological assessment as techniques for incorporating ecological goods into land-use decisions*. Jnl. of Env. Plan. and Man. Vol. 38, No. 2, 1995. 215-230.

Ellen, R. and Fukui, K. (1996). *Redefining Nature: Ecology, Culture and Domestication*. BERG, Oxford.

English Nature (1995). *Establishing Criteria for Identifying Critical Natural Capital in the Terrestrial Environment*. English Nature Research Report No. 141.

Erickson, D. and De Young, R. (1992-3). *Management of Farm Woodlots and Windbreaks - some psychological patterns*. Journal of Environmental Systems **22**: 233-247.

ESRC and the Foresight Programme (Natural Resources and Environment Panel), (1998). *Deliberative and Inclusionary processes in Environmental Policy Making Seminar Series 1998-2000*. Led by members of UCL, UEA and Lancaster. Internet web site : <http://www.geog.ucl.ac.uk/esru/dip>

F

Farina, A. (1993). *From global to regional landscape ecology*. Landscape Ecology vol. **8** no.3, 153-154.

Farmers Weekly (1.3.1996). *Headlands worth the bother*. **S14**.

Forman, R.T.T. (1995). *Land Mosaics: The ecology of landscapes and regions*. Cambridge University Press, Cambridge.

Forman, R.T.T. (1995a). *Some general principles of landscape and regional ecology*. *Landscape Ecology* Vol. 10, No. 3, 133-142.

Forman, R.T.T. and Godron, M. (1986). *Landscape Ecology*. J. Wiley and Sons.

Frondorf, A. E. McCarthy, M. and Zube, E. H. (1980). *Quality landscapes: preserving the national heritage*. *Landscape* 4, 17-24.

G

Galindo-Leal, C. and Bunnell, F.L. (1995). *Ecosystem Management: Implications and opportunities of a new paradigm*. *Forestry Chronicle*. Vol. 75, No. 5, 601-606.

Gilg, A. W. (ed.) (1992). *Restructuring the Countryside: environmental policy in practice*. Avebury studies in Green Research, Avebury, Aldershot.

Glaser, B. G. (1994). *More Grounded Theory Methodology: A Reader*. Sociology Press, CA. USA. Avebury studies in Green Research, Avebury, Aldershot.

Glaser, B. G. (1993). *Examples of Grounded Theory: A Reader*. Sociology Press, CA. USA..

Glaser, B. G. and Strauss, A. L. (1967). *The Discovery of Grounded Theory* Weidenfield and Nicolson, London.

Gold, J. and Burgess, J. (eds.). (1982). *Valued Environments*. George Allen and Unwin, Ltd., London.

Goodwin, P. (1998). *Challenging the stories about conservation: understanding local participation in conservation*. *ECOS*, 19 (2), 12-19

Grimble, R., Chan, M., Aglionby, J. and Quan, J. (1995). *Trees and Trade-offs: A stakeholder approach to natural resource management*. IIED Gatekeeper Series No. SA52.

H

Halfacree, K. H (1995). *Talking About Rurality: social representations of the rural as expressed by residents of six English parishes*. *Journal of Rural Studies*, Vol.11, No.1 pp1.20

-
- Hamberg, K., Johansson, E., Lingren, G. and Westman, G. (1994) *Scientific Rigour in Qualitative Research - examples from a study of women's health in Family Practice*. Family Practice Vol.11, No.2.
- Hammersley, M. and Atkinson, P. (1995). *Ethnography: Principles in Practice*. Second Edition. Routledge, London.
- Harvey, G. (1997). *The Killing of the countryside*. Jonathan cape, London
- HMSO (1994) Biodiversity: *The UK Action Plan*. Cm 2428. HMSO, London.
- HMSO (1995).UK Steering Group Report (1995). *Biodiversity* Volume 2: Action Plans. HMSO, London.
- Hobbs, R. (1997) *Future landscapes and the future of landscape ecology*. Landscape and Urban Planning **37**, 1-9.
- Hodge, B. (1995). *Monstrous knowledge: doing PhDs in the new humanities*. Australian Universities Review, 2/1995 p.35-39
- Hooke, Della (1999). *Hedgerows in the Landscape*. Paper presented at Hedgerows Conservation, Policy, protection and evaluation. University College Northampton. 21st July 1999.
- Hooper, M. D. (ed.) (1992). *Hedge Management*. Institute of Terrestrial Ecology - Unpublished report to the Department of the Environment.
- House of Commons (1998). *The Protection of Field Boundaries*. Select Committee on Environment, Transport and Regional Affairs 13th Report, November 1998. House of Commons Publications, London.
- House of Commons (1998a). *HC969i*. Select Committee on Environment, Transport and Regional Affairs, October 1998. House of Commons Publications, London (available on the internet).
- House of Commons (1998b). *HC969ii*. Select Committee on Environment, Transport and Regional Affairs, October 1998. House of Commons Publications, London (available on the internet).
- House of Commons (1998c). *HC969iii*. Select Committee on Environment, Transport and Regional Affairs, October 1998. House of Commons Publications, London (available on the internet).

Hunziker, M. (1995). *The spontaneous reafforestation in abandoned agricultural lands: perception and aesthetic assessment by locals and tourists*. Landscape and Urban Planning **31**: 399-410.

I

Ingram, G.B. (1991). *Habitat, visual and recreational values and the planning of extrasctive development and protected areas: a tale of three islands*. Landscape and Urban Planning **21**: 109-129.

Ison, R. L. (1993). *Participative Ecodesign: a New Paradigm for Professional Practice*, Proceedings of the Epidemiology Chapter, Australian Veterinary Association Annual Conference, Gold Coast. pp 43-55.

Ison, R.L. (1993a). *Soft Systems: A non-computer view of decision support*. In Decision Support Systems for the Management of Grazing Lands : emerging issues. Ed. Stuth, J. W. and Lyons, B. G. Man and the Biosphere Series Vol. II. UNESCO, Paris and Parthenon Publishing Group.

Ison, R. L. (1993b). *Changing Community Attitudes*. Rangel. J. **15** 154-66.

Ison, R. L., Maitney, P. T., and Carr, S. (1997). *Systems methodologies for sustainable natural resources research and development*. Agricultural Systems, **Vol.55**, No.272.

Ison, R. L. and Blackmore, C. (1997). *Environmental Decision Making: a systems approach*. Block 2, T860, The Open University, Milton Keynes.

J

Jones, Dr. V. (1999). Environmental Change Research Centre, Department of Geography, University College London. Personal Comment.

K

Kelle, U. (1997). *Capabilities for "Theory Building" and "Hypothesis Testing" in Software for Computer-aided Qualitative Data Analysis*. ESRC Data Archive Bulletin May 1977 No.65 <http://www.soc.surrey.ac.uk>

Kelle, U. (ed.) (1995). *Computer Aided Qualitative Data Analysis*. Sage Publications, London.

Kelle, U. and Laurie, H. (1995). *Computer Use in Qualitative Research and Issues of Validity*. In: Kelle, U. (ed.) (1995). *Computer Aided Qualitative Data Analysis*. Sage Publications, London. pp.19-28.

Kersten, S. (1995). *In Search of Dialogue: Vegetation Management in Western NSW, Australia*. Unpublished PhD Thesis, University of Sydney, Australia. August 1995.

King, A. and Clifford, S. (1987). *Holding Your Ground*. Wildwood House, Aldershot.

Kirby, K. (1995). *Rebuilding the English Countryside: habitat fragmentation and wildlife corridors as issues in practical conservation*. English Nature Report No. **10**.

Koh, J. (1982). *Ecological Design: A post-modern paradigm of holistic philosophy and evolutionary ethic*. Landscape Journal Vol. **1**, No. 2, 76-84.

Kupfer, J. A. (1995). *Landscape ecology and biogeography*. Progress in Physical Geography. Vol. **19**, No. 1 18-34.

L

Lane, A. B. and Carr, S. (1991). *The Development and Evaluation of Assessment and Management Criteria for Wildlife Habitats - A Systems Approach*. Open University Working Paper.

Lane, A. and Oreszczyn, S (1997). *The assessment and Management of Wildlife Areas: What can systems offer?* In Stowell, F. A., Ison, R. L., Armason, R. Holloway, J., Jackson, S and McRobb, S. (eds.) (1997). *Systems for Sustainability: People, Organisations and Environments*. Plenum Press, New York.

Lane, A., Wheeler, N. and Oreszczyn, S. (1995). *Assessment Criteria Profiling Wildlife Corridor Units*. Unpublished Working Document, The Open University.

Languish, J. (1993). *Case Studies as a Biological Research Process*. Research Paper 67. Institute of Advanced Studies, The Manchester Metropolitan University.

Lee, R. M. and Fielding, N. G. (1995). *User's Experiences of Qualitative Data Analysis Software*. In Kelle, U. (ed.) (1995). *Computer Aided Qualitative Data Analysis*. Sage Publications, London.

Likert, R. (1932). *A technique for the measurement of attitudes*. Archives of Psychology No.140.

Lincoln, Y. S. and Guba E. G. (1985). *Naturalistic Inquiry*. Sage Publications, London.

Lockwood, F. (1996). *The Inside Story: insights into student learning obtained from self recorded audio tape*. The Open University. Milton Keynes. Paper presented at Research in distance Education Conference, Deakin University, Australia. 10-12 December 1996.

Lockwood, F. (1992). *Self-recorded audio-tape: An alternative data collection method*. Paper presented at the European Conference on Educational Research, University of Twente, The Netherlands, June 22-25, 1992.

Lonkila, M. (1995). *Grounded Theory as an Emerging Paradigm for Computer-assisted Qualitative Data Analysis*. In Kelle, U. (ed.) (1995). *Computer Aided Qualitative Data Analysis*. Sage Publications, London. pp.41-51.

Lowe, P., Clark, J. Seymour, S. Ward, N. (1997). *Moralising the Environment: Countryside change. farming and pollution*. UCL Press, London.

Lucas, P. H. C.(1992). *Protected Landscapes*. Chapman and Hall, London.

M

Mabey, R. (1996). *Flora Britannica*. Sinclair-Stevenson, London

Macdonald, D. W. (1984). *A Questionnaire survey of farmers opinion and actions towards wildlife on farmlands*. In: Jenkins, D. (ed) *Agriculture and the Environment*. 171-176. Cambridge.

Maclean, M. (1992). *New Hedges for the Countryside*. Farming Press Books, Ipswich.

MAFF (1996). *The Countryside Stewardship Scheme Application Pack*. PB 2505. MAFF, London.

Marshall, E. J. P. and Moonen, A. C. (1998). *A Review of Field Margin Conservation Strips in Europe*. May 1998. Unpublished Report. AIR-CT 920476/920477 IACR Long Ashton Research Station, Bristol.

Matless, D. (1998). *Landscape and Englishness*. Reaktion Books Ltd., London.

McClintock, D. (1996). *Metaphors that inspire 'researching with people': UK farming, countryside and diverse stakeholder concepts*. Unpublished Ph.D. Thesis. The Open university, Milton Keynes.

-
- McEachern, C. (1992). *Farmers and Conservation: Conflict and Accommodation in Farming Politics*. Journal of Rural Studies **Vol. 8**. No. 2 159-171.
- McHenry, H. (1997). *Wild flowers in the wrong field are weeds! Examining farmer's constructions of conservation*. Environment and Planning A , **Vol.29**, pages 1039-1053.
- McHenry, H. (1996). *Understanding Farmers' Perceptions of Changing Agriculture: some implications for agri-environmental Schemes*. In Curry, N. and Owen, S. (eds.) (1996). *Changing Rural Policy in Britain : Planning Administration Agriculture and the Environment*. The Countryside Community Press, Cheltenham, UK.
- Melnychuk, D. (1995). *The Delta Farmland and Wildlife Trust. Environmental Enhancement through Agriculture: Proceedings of a Conference*, Boston, Nov. 15-17 1995. Centre of Agriculture, Food and Environment. Tufts University Medford. USA.
- Menneer, R. (1994). *Wildlife Revival in Cornish Hedges*. Dyllansow Truran Publications, Treolsta.
- MIM61U Study Guides, (1996). *Grounded Theory: Research Methodology Study Guide : Unit 5*. MSc in Nursing royal college of Nursing distance Learning Institute.
- Montgomery, R. (1996). *Resources in Social Development Practice*. Vol. **3**, Centre for Development Studies, Swansea.
- Morgan Evans, D. (1994). *Hedges as Historic Artefacts*. In Watt, T. A. and Buckley, G. P.(ed.) (1994). *Hedgerow Management and Nature Conservation*. Wye College Press.
- Morris, R. M. (1997). *The Technology of Sustainable Agricultural Systems*. In Stowell, F. A., Ison, R. L., Armason, R. Holloway, J., Jackson, S and McRobb, S. (eds.) (1997). *Systems for Sustainability: People, Organisations and Environments*. Plenum Press, New York.
- Muir, R. (1998). *Landscape a Wasted Legacy*. Area, **30.3**, 263-271.

N

- Nassauer, J. I (ed.) (1997). *Placing Nature: Culture and Landscape Ecology*, Island Press, USA.

-
- Nassauer, J. I. (1995). *Messy ecosystems, orderly frames*. Landscape Journal 161-170.
- Nassauer, J. I. (1995a). *Culture and changing landscape structure*. Landscape Ecology, Vol. **10**, 229-235.
- National Trust (1995). *Linking People and Places: a consultation report*. National Trust, Cirencester.
- Naveh, Z. (1998a). *From biological to Ecodiversity – Holistic Conservation of the Biological and Cultural Diversity of Mediterranean Landscapes*. Ecological Studies Vol. **136**, 23-53.
- Naveh, Z. (1998b). *The Ecological Dimensions of Regional Development*. In Gabriel, I and Nardoslawsky, M. Ed. *Regions-cornerstones for sustainable development*. Symposium Proceedings. Graz, Austria. October 28-30, 1998. Minoritensaal.
- Naveh, Z. (1995). *Interactions of landscapes and cultures*. Landscape and Urban Planning **32**: 43-54.
- Naveh, Z. and Lieberman, A. (1994). *Landscape Ecology: Theory and Application*. 2nd Edition. Springer.
- Nilsson, C and Grelsson, G. (1995). *The fragility of ecosystems*. Journal of Applied Ecology. **32**, 677-692.

O

- Oakley, P (1983). *The monitoring and evaluation of participation in rural development. (Draft)* Food and Agricultural Organisation of the United Nations, Rome. November 1983.
- ODA (date unknown). *Social Development Handbook*, Overseas Development Association, London.
- Oke, T. R. (1978). *Boundary Layer Climates*. Methuen, London.
- Open University (1996). TU870: Capacities for Managing Development. Course Text.
- Open University (1996a). *T247: Working with Systems: Participating in systems*. Faculty of Technology Second Level Course. The Open University, Milton Keynes.

Open University (1993-1998). *Principles of Social Education Research: Data collection and Construction*. DEH313: Block 3. Units 11. The Open University Milton Keynes.

O'Riordan, T. Wood, C. and Shadrake, A. (1993). *Landscapes for Tomorrow*. Journal of Environmental Planning and Management **Vol. 36**, No. 2,

Oreszczyn, S. (1999). *A Systems approach to the Research of People's Relationship with English Hedgerows*. In: Palang, H. Mander, U. Naveh, Z. (eds.). Holistic Landscape Ecology in Action. Landscape and Urban Planning. In press.

Oreszczyn, S. and Lane (1999a) *How hedgerows and field margins are perceived by different interest groups*. In: Boatman, N., Davies, D. H. K., Chaney, K., Fieber, R., De Snoo, G. R. and Sparks, T. H., (eds.). *Field Margins and Buffer Zones: Ecology, Management and Policy*. Aspects of Applied Biology, 54.

Oreszczyn, S and Lane, A. (1999b). Hedgerows as part of cultural landscapes. In: McCollin, D. and Jackson, J.I. (eds.) *Hedgerow Conservation: Policy, Protection and Evaluation*. pp. 39 - 43. Northampton: University College Northampton.

Osgood, C. E., Suci G. J. and Tannenbaum, P. H. (1957). *The Measurement of Meaning*. Urbana, Univeristy of Illinois Press.

Overseas Development Association - *Social Development Handbook*. Date Unknown.

Overseas Development Administration (1995). *Note on Enhancing Stakeholder Participation in Aid Activities*. Social Development Department, April 1995.

The Oxford Dictionary of Current English (1984). Oxford University Press.

P

Packer, J. (1995). *Mammals and Hedgerows*. In Barr, C. J., Britt, C. P. and Sparks, T. H. (1995). *Hedgerow Management and Wildlife* ITE/ADAS report to MAFF unpublished.

Paine, M. (1997) *.Doing It Together: Technology as Practice in the New Zealand Dairy Sector*. Published PhD. Thesis, Wageningen, Netherlands.

Parish, T., Lakhani, K. H. and Sparks, T. H. (1995). *Modeling the relationship between bird population variables and hedgerow, and other field margin attributes. II. Abundance of individual species and of groups of similar species*. Journal of Applied Ecology, **32**, 362-371.

Parker, R. A. C. (1960). *Enclosures in the Eighteenth Century*. The historical Association 1960.

Parsons, R. (1995). *Conflict between ecological sustainability and environmental aesthetics: conundrum, conard or curiosity*. Landscape and Urban Planning. **32**, 227-244

Phillips, T., and Buckley, S. (date unknown). *Harvesting the Fraser: an Early History of Delta*. Delta Museum and Archives, Ladner, BC.

Pollard, E., Hooper, M. D. and Moore, N. W. (1974). *Hedges*. Collins, London.

Pretty, J. (1994). *Alternative Systems of Inquiry for a Sustainable Agriculture*. ids bulletin **vol. 25**: no. 2.

Previn, G. Kelle, U. Bird, K. (1995). *An Overview of Software*. In Kelle, U. (ed) (1995) *Theory, Methods and Practice*. Sage Publications, London. pp.190-209.

Punter, J. V. (1982). *Landscape Aesthetics: a synthesis and critique*. In Gold, J. and Burgess, J. (eds.) (1982). *Valued Environments*. George Allen and Unwin, Ltd., London.

Q

QSR NUD*IST 4 (1997). *User Guide*. Qualitative Solutions and Research Pty Ltd , Australia. Distributed by SCOLARI: Sage Publications Software.

R

Rackham, O. (1990) . *Trees and Woodland in the British Landscape*. Second Edition. J. M. Dent Ltd., London.

Rackham, O.(1989). *The Last Forest*. J. M. Dent Ltd., London.

Rackham, O. (1986). *The History of the Countryside*. J. M. Dent Ltd., London.

Ratcliffe, D. A. (ed.) (1977). *A Nature Conservation Review V0ls. 1 and 2*. Cambridge University, Cambridge.

Reason, P. and Heron, J. (1986). *Research with People: The paradigm of cooperative experiential inquiry*. Person-centred Review Vol.1, No. 4: 456-476.

Reinharz, S. (1992). *Feminist Methods in social Research: Chp2. Feminist Interview Research*. O.U.P.

Richards, T. and Richards, L. (1995). *Using Hierarchical Categories in Qualitative Analysis*. In Kelle, U. (ed.) (1995). *Computer Aided Qualitative Data Analysis*. Sage Publications, London. pp.80-95.

Robinson, M. (1978). *The problem of hedges enclosing Roman Earlier Fields*. British Archaeological Reports **48**, 155-158.

Robson, C. (1993). *Real World Research: A resource for social science practitioner-researchers*. Blackwell, Oxford, UK.

S

Science, (1999). *Sustaining Natural and Human Capital: Villagers and Scientists*. Vol. **283**, 19 March 1999.

Scoones, I and Thompson, J. (1994). *Knowledge, power and agriculture - towards a theoretical understanding*. In Scoones, I and Thompson, J.(eds.) *Beyond Farmer First: rural peoples knowledge, agricultural research and extension practice*. Intermediate Technology Publications.

Seidel, J. and Kelle, U. (1995). *Different Functions of Coding in the analysis of Textual Data*. In Kelle, U. (ed.) (1995). *Computer Aided Qualitative Data Analysis*. Sage Publications, London. pp. 53-61.

Selman, P. (1996). *The Potential for Landscape Ecological Planning*. In Curry, N. and Owen, S. (eds.) (1996). *Changing Rural Policy in Britain : Planning Administration Agriculture and the Environment*. Chapter2. The Countryside Community Press, Cheltenham, UK.

Selman, P. (1993). *Landscape Ecology and Countryside Planning: Vision Theory and Practice*. Journal of Rural Studies. Vol. **9**. No. 1, 1-21.

Short, J. R. (1991). *Imagined Country: Society, Culture and Environment*. Routledge, London.

-
- Shuttleworth, S. (1980). *The Use of Photographs as an Environmental Presentation Medium in Landscape Studies*. *Journal of Environmental Management* **11**: 61-76.
- Silsoe College/Cranfield University, (1995). *The Economics of Sustainable Hedge Cutting*: Report to the Devon Hedge Group.
- Simmons, I. G. (1993). *Interpreting Nature*. Routledge, London.
- Simonovic, S. P. and Bender, M. J. (1996). *Collaborative planning-support system: an approach for determining evaluation criteria*. *Journal of Hydrology* Vol, 177 237-251.
- Sinha, A (ed.) (1995). *Readings in Environmental Psychology: Landscape Perception*. Academic Press, London.
- Sotherton, N. W. and Rands, M. R. W. (1987). *The Environmental Interest of Field Margins to Game and Other Wildlife: A Game Conservancy View*. BCPC Monograph **No. 35**: Field Margins
- Strauss, A. and Corbin, J. (1990). *Basics of Qualitative Research: Grounded theory Procedures and Techniques*. Sage Publications, Ltd., London.
- Stowell, F. A., Ison, R. L., Armason, R. Holloway, J., Jackson, S and McRobb, S. (eds.) (1997). *Systems for Sustainability: People, Organisations and Environments*. Plenum Press, New York.
- Spellerberg, I. F. and Gaywood, M. J. (1993). *Linear features: linear habitats and wildlife corridors*. English Nature Research Report, No. **60**.

T

- Tate, W. E. (1967). *English Village Community and Enclosure*. Victor Gollancz Ltd., London.
- Tew, T. E. (1994). *Farmland Hedgerows: Habitat, corridors or irrelevant? A small mammal perspective*. In Watt, T. A. and Buckley, G. P. (eds.). *Hedgerow Management and Nature Conservation*. Wye College Press.
- Tofts, R. J. and Clemments, D. K. (1994). *The Development and Testing of HEGS, a Methodology for the Evaluation and Grading of Hedgerows*. in Boatman, N. (ed) *Field Margins: Integrating Agriculture and Conservation*. BCPC Monograph No. **58**: 277-282.

Troll, C. (1971). *Landscape Ecology and Biocenology*. Geoforum, **8**, 43-46.

Turner, B. A. (1981). *Some Practical Aspects of Qualitative Data Analysis: one way of organising the cognitive processes associated with the generation of Grounded Theory*. Quality and Quantity 15. 225-247.

U

Uzzel, D. L. (1982). *Environmental pluralism and participation co-orientational perspective*. In Gold, J. and Burgess, J. (eds.) (1982) *Valued Environments*. George Allen and Unwin, Ltd., London.

V

van Deth, J. W. and Scarborough, E. (ed.) (1995). *The Impact of Values: Beliefs in Government*. Oxford University Press, Oxford.

W

Warburton, D. (1998). *Participation in Conservation: grasping the nettle*. ECOS, **19** (2), 2-11.

Watt, T. A. Buckley, G. P.(ed.) (1994). *Hedgerow Management and Nature Conservation*. Wye College Press.

Way, J. M. and Grieg-Smith, P. W. (ed.) (1987). *Field Margins*. BCPC Monograph No. **35**.

Webber, L. (1993). *Design and conduct of co-researching processes: Braiding theory and practice for research with people*. Community Approaches to Rangeland Research (CARR) Project (USY90), Australia.

Weins, J.A., Stenseth, N.C., Horne, B.V., and Ims, R.A., (1993). *Ecological Mechanisms and Landscape Ecology*. OIKOS 66: 369-380.

Weitzman, E. A. and Miles, M. B. (1995). *Computer Programs for Qualitative Analysis*. Sage Publications, London.

Whelon, D. 1994). *The Hedgerow Incentive Scheme*, in Hedgerow Management and Nature Conservation, Watt, T. A. and Buckley, G. P. (ed.) Wye College Press, University of London.

Whyte, A. T. (1977). *Guidelines for field studies in environmental perception*. UNESCO, Paris.

Willis, K. and Garrod, G. (1991). *Landscape Values: A contingent valuation approach and case study of the Yorkshire dales National Park*. Countryside Change Working Papers Series, Countryside Change Unit, University of Newcastle upon Tyne.

Wilson, A. (1994). *The Fight for Hedgerow Protection Legislation* in Hedgerow Management and Nature Conservation, Watt, T. A. and Buckley, G. P. (ed.) Wye College Press, University of London.

Woodhill, J. and Roling, N. (1993). *The Second Wing of the Eagle: The human dimension in learning our way to more sustainable futures*. Mimeo, University of Western Sydney, Hawkesbury and Wageningen.

Y

Yelling, J. A. (1977). *Common field and Enclosure in England 1450-1850*. Macmillan Press Ltd., London.

Yin, R. K. (1989). *Case Study Research: design and methods* (2nd edition). Sage, London.

Z

Zanaboni, A. and Lorenzoni, G.G. (1989). *The importance of hedges and relict vegetation in agroecosystems and environment reconstitution*. Agriculture Ecosystems and Environment, **27**, 155-161.

[Please Note: not all of the appendices are in this file as they were originally created in separate files or as hard copy.]

Appendix 1: The Background to the 1997 Hedgerow Regulations

A1.1 A HISTORY OF HEDGEROW LEGISLATION

Today, Government policy is being directed at protecting hedgerows and other field boundaries such as stone walls. However enclosures, and by association their boundaries, have been the subject of Government policy since the 1400s (Tate, 1967), particularly in the areas defined by Rackham (1986) as the planned countryside (see figure 2.2).

A1.1.1 Pre-1750

The original open field system of areas, such as East Anglia, were based on subsistence agriculture, i.e. local people meeting local needs. Such agricultural systems were perceived as being uneconomic in time and labour and early attempts were made to enclose land by Lords of Manors. New crop rotation methods resulted in soil of lower quality being cultivated and although some enclosed land was used for pasture, the demand grew for more arable land for the new types of crops and more complex and productive crop rotations (Parker, 1960). Thus, whereas later hedgerows were removed as a result of agricultural intensification, at this time many hedgerows were the result of a move by landowners to more intensive and arable farming.

However, in the 1500's, enclosure of open arable fields was actually against public policy and efforts were made to keep it in check out of concern for the peasant worker. (Tate, 1967).

The term Enclosure or Inclosure as it is referred to in the Government Acts, referred essentially to two processes – (i) The rationalising of the original open field system, and (ii) bringing uncultivated land into cultivation or intensifying cultivation of lightly cultivated land, e.g. land used for rough grazing. Although the reasons for enclosure were complex and varied from region to region (Yelling, 1977), until 1750

the main process of enclosure was through wealthy land owners buying out freeholders and owners of rights of common and enclosing the land, and through agreements between landholders. As farming methods improved and the demand for agriculture grew during the rise of the Industrial Revolution, the larger and more progressive farmers and landowners increased demands for enclosure of open land. The lengthy process of court decrees previously used to grant enclosure were, therefore, replaced by private Acts of Parliament and the main period of enclosure began.

A1.1.2 Post 1750

Beyond 1750 Parliamentary Enclosure Acts were used to encourage reluctant landowners to accept agricultural change while rising prices for agricultural produce made it worthwhile enclosing less productive, previously marginal land (Parker, 1960). The first Act was passed in 1603 and around 5,000 Acts were passed dealing with seven million acres of land (Pollard et al., 1974). The last major Enclosure Act was passed in 1903 for Skipworth in Yorkshire (Carr and Bell, 1991). However, the period between 1750 and 1850 was the most active with around 200,000 miles of hedgerows being planted (Rackham, 1990) resulting in a dramatic change to parts of the English landscape. The Lakeland and Scottish walls generally date from the nineteenth century as the main period of enclosure in these areas was later. Enclosure itself was an expensive and lengthy task, often taking between four to eight years to complete. The practical work was carried out by commissioners who were appointed by the Act. The process not only included the fees and expenses of commissioners and their assistants, but also legal and parliamentary expense for passing a private act, making fences, walls, planting etc, and the construction of new roads and drainage schemes. Costs were believed to amount to about £1.5s per acre (Parker, 1960). Each new holding was usually marked with a ditch, hedge, or wall as a condition of enclosure. The hedges from this period tended to be planted with one or two species, usually hawthorn, and the fields tend to be rectangular and form a regular pattern. Although around one quarter of the English countryside is believed to have been enclosed during the main period of enclosure, there is evidence which suggests that this is an underestimation. Recent evidence suggests that 42% of open-field enclosures were as a result of non-parliamentary methods, for example by private agreements, and that actually about one third of the English Landscape was therefore enclosed

during this period, (Chapman and Sheail, 1994). Overemphasis by researchers on enclosures resulting from the parliamentary Acts may also be a result of the information sources, i.e. the Acts and Awards, being readily available and easy to use, whereas other types of enclosure require detailed searching of less accessible records preserved by landowners (Parker, 1960).

Today there is little remaining common land left in the UK and the 'Inclosure Acts' still afford some degree of protection for hedgerows. Under the Acts ownership was conveyed subject to various specifications. The majority of the Inclosure Acts have not been repealed (House of Commons, 1998) and in 1997 an Act passed in Flamborough, Humberside which stated that a particular live hedge should be maintained in perpetuity, was upheld in the County Court (Seymour and Yorkshire Trust v. Flamborough Parish Council, 1997; House of Commons, 1998 and 1998c). However, as the case did not reach the High Court, it did not set a precedent. Whether an Act remains enforceable and the extent to which it provides protection will be dependent on the exact wording of the Act. The degree of protection that they may afford is, therefore, unknown. However, the Select Committee on Environment Transport and Regional Affairs suggested there is evidence that the wording of the Flamborough Act may be common (House of Commons, 1998). It was also the belief of Mr. Seymour, who brought the Flamborough case to court, that far more hedgerows were likely to be protected under the Inclosure Acts than under the recent Hedgerow Regulations (CDR, Nov.96).

A1.2 PROVISION UNDER THE ENVIRONMENT ACT

Over the past twenty years there has been mounting public concern over the loss of hedgerows. A total of 90 parliamentary questions concerning hedgerows were asked between 1982 and 1992 (Barr and Parr, 1994). Attempts to obtain legislative protection were made as early as 1987 through a Private Members Bill. However, they were unsuccessful as a result of objections from the Ministry for Agriculture Fisheries and Food (MAFF) on the grounds that the worst of the hedgerow removal was now over (Wilson, 1994). Non-government organisations such as the Council for the Protection of Rural England and Royal Society for the Protection of Birds, placed increasing pressure on the Government to act. As a result the Government changed its policy (Dwyer, 1994).

During 1986, the Monitoring Landscape Change Survey carried out by Hunting Surveys and Consultants Ltd., used aerial photographs to detect changes between 1947 and 1985. This survey showed a 22% hedgerow loss for that period, however, the survey was contradicted by a study carried out by MAFF and no immediate action was taken. Concern led to the inclusion of hedgerow protection in the review of tree preservation policies and legislation in 1991. Hedgerow Management Orders were recommended as a means to ensure that important hedges were not lost through lack of management. The Government finally promised to give local authorities the means to protect 'key' hedgerows in its white paper on the environment (Department of the Environment, 1990).

Government policy has been strongly linked to empirical research. The general decline in hedgerows was identified by the Institute of Terrestrial Ecology (ITE) which has carried out a series of surveys (1978, 1984, 1990 and 1993) on the British countryside and hedgerows (Barr and Parr, 1994). The 1990 Countryside Survey is being repeated and is due in 2000. In 1992 the Countryside Commission launched the Hedgerow Incentive Scheme, later incorporated into the Countryside Stewardship Scheme. However, a further Private Members Bill in 1992, which attempted to bring in the legislative protection required for the implementation of a notification scheme, failed.

Provision for legislation on hedgerow protection was finally set out in section 97 the Environment Act which was published in July 1995 (Department of the Environment, 1995a). Stating that:-

“The appropriate Minister may by regulations make provision for, or in connection with, the protection of important hedgerows in England and Wales”.

and

“The questions whether a hedgerow is or is not “important” for the purposes of this section shall be determined in accordance with prescribed criteria.”

Before making any regulations under this section the appropriate Ministers were instructed within the Act to consult various representative bodies and those which the Minister felt appropriate.

Thus the decision on what was deemed to be an 'important' hedge and who it was appropriate to consult became the responsibility of the Secretary of State and Minister of Agriculture Fisheries and Food.

A1.3 THE 1997 HEDGEROW REGULATIONS

The task of developing an appropriate method for identification of what was an 'important' hedgerow was given to ADAS who developed a set of criteria, see Appendix 8, (Department of the Environment, 1996b). On 21st October 1996 the Department of Environment, MAFF and the Welsh Office published the Draft Hedgerow Regulations and accompanying Joint Consultation Paper. Over 600 copies were sent out to what were deemed 'appropriate' bodies in England and Wales. 465 responses to the consultation document were received and logged and the key issues concerning overall workability of the proposed regulations, concerns over the evaluation criteria for selecting an important hedgerow, enforceability and the associated costs of the scheme, were reported on by Environmental Resources Management (Department of the Environment, 1997a). The majority of comments were negative (Department of the Environment, 1997a) although criticism tended to be constructive, including comments about how the regulations could be improved. The responses were lodged for a short period in the library at the Department of the Environment and were made available to the public. I was therefore able to make several visits to London to inspect them for myself.

During the consultation process there was much criticism of the regulations and associated criteria. However, only minor changes to the regulations were made and they were debated and passed through both the House of Commons and Lords. Despite eleven of the leading countryside and wildlife organisations writing to the Environment Secretary, John Gummer, just before approval of the draft regulations, requesting that he withdraw and redraft them (Bartram, 1997), the regulations were approved by parliament on 20th March 1997 and came into effect on 1st June 1997. At this time it was appreciated that further changes may be required in light of actual experience with implementing the Act. When the present Government came into power, in a press release on 29th May 1997 (Department of the Environment, 1997a) Michael Meacher, the Secretary of state for the new Department of the environment Transport and the Regions, announced a review of the regulations and stated:-

"The regulations, laid by previous Government to protect countryside hedgerows of significant historical, wildlife or landscape value, are but a first step in safeguarding

these important features. We are determined to have an effective system which provides strong protection. “

A further review of the regulations was undertaken by a group including the statutory agencies, local authorities and main farming and conservation bodies, and the findings were published in June 1998 (Department of the Environment Transport and the Regions, 1998). Following this report, further evidence was gathered and reported on by the House of Commons Select Committee on Environment, Transport and Regional Affairs, in July 1998, (House of Commons, 1998a, b, and c).

A1.3.1 Coverage

Appendix 8 sets out the main features of the 1997 Hedgerow Regulations.

Hedgerows are the only field boundary to have specific statutory protection. Stone walls, for example, are not included in the provisions made by the Environment Act. Protection is restricted to hedgerows of national importance rather than local importance. Urban hedgerows are specifically excluded from the regulations.